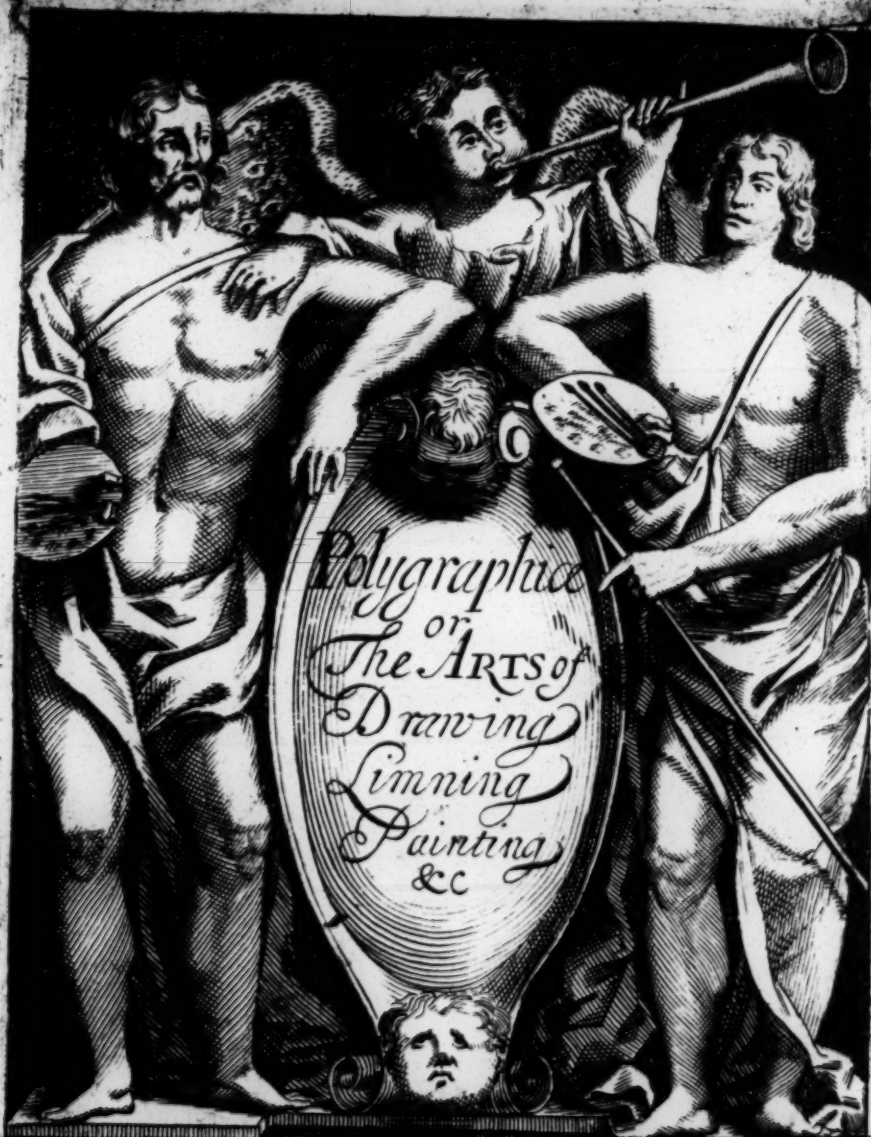




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**POLYGRAPHICE;**

O R

The Arts of Drawing, Engraving,  
Etching, Limning, Painting, ~~washing,~~  
~~Varnishing,~~ Gilding, Colouring,  
Dying, Beautifying and Perfuming.

IN FOUR BOOKS.

Exemplified, in the *Drawing of Men, Women, Landskips,*  
*Countries,* and Figures of various forms; The way of  
*Engraving, Etching and Limning*, with all their Re-  
quisites and Ornaments; The *Depicting of the most*  
*eminent Pieces of Antiquities*; The *Paintings of the An-*  
*tients*; *Washing of Maps, Globes, or Pictures*; The  
*Dying of Cloth, Silk, Horns, Bones, Wood, Glass,*  
*Stones, and Metals*; The *Varnishing, Colouring and*  
*Gilding thereof*, according to any purpose or intent;  
The *Painting, Colouring and Beautifying of the Face,*  
*Skin and Hair*; The *whole Doctrine of Perfumes* ( ne-  
ver published till now ) together with the *Original,*  
*Advancement and Perfection of the Art of Painting.*

The Second Edition, with many large Additions. Ad-  
orned with Sculptures: The like never yet extant.

By **WILLIAM SALMON** φιλαλήτης.

Marcel. Palin. lib. 8.

*Genus est absque ordine nullum.*

London, Printed by E. T. and R. H. for John Crumpe, at  
the Sign of the three Bibles in St. Paul's Church-Yard, 1673.

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Norton Fund  
November 9, 1950

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*To the Right Honourable*

**H E N R Y**

Lord HOWARD, Earl

O F

*N O R W I C H,*

EARL Marshal of ENGLAND.

*My LORD,*



He Art of Painting was a thing which of old *Princes* admired, *Kings* did affect, *Emperors* and *Noble* men of almost all Ages did love and make use of. Not to mention *Juba Rex Mauritanie*, *Perseus* King of *Macedonia*, King *Demetrius*, *Cyrus* King of *Persia*, *Alexander* the Great, *Cesar*, and others: How was *Tiberius* the Emperor taken with the Archigallus of *Parrhasius*, and the statue which *Lysippus* made? How highly did



## The Epistle

did *Mnaſon* the Tyrant of the *Elcatenſes* prize the pictures of the *Thebean* battel done by *Ariſtides*? How did King *Nicomedes*, who proffered an unknown ſum of money to the *Gnidians*, for the *Venus* which *Praxiteles* made, admire it? What eſtimation had *Marcus Agrippa* for it, who offered vaſt ſumms to the inhabitants of *Cyzicus* for the two pictures of *Ajax* and *Venus*? Beſides many others too tedious here to be recited, and ſufficiently enough known to your Lordſhip, of which to make any repetition might be accounted preſumption, eſpecially to your Honour, whoſe Skill in Art is large, and whoſe Knowledge of Universal Learning is not ſmall, eſpecially in that of *Hiſtory*. It is Honour, as *Cicero* ſaith, which gives Being, Life and Nouriſhment to Arts, and where can that be found more than in your Noble Self? Preſuming therefore of your Lordſhips Affection, and that Unparallel'd Vertue, and Heroick Spirit, which not only lodges in your Honours Breſt, but is alſo Hereditary to your Noble Family, I have made bold to ſhelter this work under your Lordſhips Patronage; expecting either to ſee it live in your Honours Eſtimation, or periſh in your diſlike. Now if theſe *Lucubrations* of mine, obtain but ſo much as your Honours leaſt Approbation, I ſhall think my ſelf Happy; and hope, that with  
your

## Dedicatory.

your *Name* and *Memory*, this work may be consecrated to Eternity. May your *Lordship* daily increase in *Honour* and *Glory*, be replenished with all *earthly Blessings*, and for ever enjoy the full fruition of all *Happiness* both in this *World*, and that which is *to come*, is the Prayer of

MY LORD,

Your Honours most Humble and

Affectionate Servant,

*William Salmon.*



THE  
PREFACE  
TO THE  
READER.



*He Subject of the ensueing work is the Art of Painting: a name not only too singular; but also too short or narrow, to express what is here intended thereby: For we do not only express that Art, (as it is generally received) but also Drawing, Engraving, Etching, Limning, Washing, Colouring and Dying; all which being considered in their proper extent, infinitely exceed that curtail'd name of Painting; which that we might join all in one proper and comprehensive word, we made choice of that Greek Compound POLYGRAPHICE.*

*To perswade any one to the study or practice of this Art, would be a great folly; since Ignorance (which is a w<sup>ays</sup> blind) can never be able to judge aright: For to him that already understands it, the labour would be useless and unprofitable; to him which is already delighted therein, it wou'd be needless and superfluous; and to the Averse and Ignorant, it wou'd be the putting a Jewel in'o a Swines snout: the exquisite knowledge of which is impossible ever to be attained*

## The Preface

crunderstood, by such prejudicate and cloudy Souls, although it is sufficiently known to many already; and its usefulness as apparent as it is excellent: To enumerate the one, or rehearse the other, is but to persuade the world, that it is day-light when the Sun is upon the Meridian; or at least to inculcate, an ignorance of those things, which have been manifestly known even a long time since.

The Method of this work is wholly new, wherein we have united and made one, such various subjects, as have been the uncertain, obscure and tedious discourse of a great number of various and large Volumes. What shall we say? things far asunder, we have laid together: things uncertain, are here limited and reduced: things obscure, we have made plain: things tedious, we have made short: things erroneous, we have rectified and corrected: things hard, we have made facil and easie: things various, we have collected: things (in appearance) heterogeneous, we have made homogeneous: And in a word, the whole Art we have reduced to certain heads; brought under a certain method; limited to practical rules; and made it perspicuous, even to a very mean understanding.

In the Composition of this work (besides our own Observations) we have made use of the best Authors now Extant, that we could possibly procure, or get into our hands; wherein our labour was not small; what in Reading, Comparing, Transcribing, Choosing, Correcting, Disposing, and Revising every thing, in respect of Matter, Form, and Order. The which had we any President to have followed; any Path to have traced; any Example to have imitated; any Help to have consulted; or any Subject entire: Or otherwise, had the Number of our Authors been small; their Maxims, truths; their Rules, certain; their Meanings not obscure; or their Precepts been reduced to Method and Order: We might not only, with



## to the Reader.

with much more ease, pleasure, and certainty; less labour, trouble, and pains; greater perspicuity, plainness and singularity; better order, method, and language; but also in shorter time have brought to perfection, what we here present you withal.

In this second Edition we have not only inserted several Copper Cuts, with more than two hundred several additions of singular use, through the three first books; but there is also a whole fourth book, containing above three-score Chapters of such necessary matter, that the work without them may really be accounted defective. 'Tis true, some things are not only immethodically disposed (by reason this latter part was not intended at the reprinting hereof till afterwards, upon more mature and deliberate consideration) but also much out of Order; yet we thought better to have them out of Order, than out of the Book. There is not only several necessary things added (which were omitted in the three first books;) as also the various depictingings of the Antients, according to the custom of every nation, drawn from the best, most experienced and faithfullest Authors now extant, (whether English, Italian or Latin) but also the various ways of Painting, Beautifying and Adorning the Face and Skin, so artificially, as it shall be imperceptible to the scrutiny of the most curious and piercing eye: to which we have added (as a necessary Appendice) the whole doctrine of Perfumes, never written on (to our knowledge) in this order before; together with the Original, Advancement and Perfection of these Arts.

Lastly, the Reader is desired to take notice, that in this following work, there are many excellent secrets, not vulgarly known, which fell into our hands from several special friends, (whose exquisite knowledge in these kinds of Mysteries doth truly declare them to be absolute Masters thereof) which for the publick good are freely communicated to the world.

William Salmon.





# POLYGRAPHICES

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# DRAWING.

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### CHAP. I.

#### *Of Polygraphice in General.*

I. **P**olygraphice is an Art, so much imitating Nature, as that by proportional lines with answerable Colours, it teacheth to represent to the life (and that *in plano*) the forms of all corporeal things, with their respective passions.

II. It is called, in general, in Greek, *ἡρώματις*, in Latin *Pictura*, and in English the *Art of Painting*.

III. It is sevenfold (to wit) in *Drawing*, *Engraving*, *Etching*, *Limning*, *Painting*, *Washing* and *Colouring*.

IV. *Drawing* is that whereby we represent the shape and form of any corporeal substance in rude lines only.

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V. It consists in proportion and passion, as it hath relation to motion and situation, in respect of Light and Vision.

VI. *Sanderson* saith, This Admirable Art is the Imitation of the surface of Nature in Colour and Proportion. 1. By Mathematical demonstration, 2. By Chorographical description, 3. By shapes of Living creatures, 4. And by the forms of Vegetables; in all which it prefers Likeness to the life, conserves it after death, and this altogether by the Sense of Seeing.

VII. The *proportion* shews the true length, breadth or bigness of any part (in known measures) in respect of the whole, and how they bear one to another. The *Passion* represents the visual Quality, in respect of love or hatred, sorrow or joy, magnanimity or cowardise, majesty or humility; of all which things we shall speak in order.

## CHAP. II.

### *Of the Instruments of Drawing.*

I. **T**He Instruments of Drawing are sevenfold, viz. Charcoals, feathers of a Ducks-wing, black and red Lead pencils, pens made of Ravens quills, Rulers, Compasses, and Pstils.

II. *Charcoals* are to be chosen of Sallow-wood split into the form of pencils, and sharpened to a point, being chiefly known by their pith in the middle.

Their use is to draw lightly the draught over at first, that if anything be drawn amiss it may be wiped out and amended.

III. The feathers ought to be of a Ducks-wing, (though

though others may serve well enough) with which you may wipe out any stroak of the Charcoal where is drawn amiss, lest variety of Lines breed confusi-

IV. *Black and red Lead pencils*, are to go over your draught the second time more exactly, because this will not wipe out with your hand, when you come to draw it over with the pen.

V. *Pens* made of Ravens quills (but others may serve) to finish the work: but herein you must be very careful and exact, for what is now done amiss there is altering of.

VI. The *Rulers*, which are of use to draw straight perpendicular lines, triangles, squares or polygons, which you are to use in the beginning, till practice and experience may render them needless.

VII. *Compasses* made of fine Brass with Steel-points, take in and out, that you may use black or red Lead pleasure.

Their use is first to measure (by help of a curious scale equal parts upon the edge of your Ruler) your proportions, and whether your work is exact which is done with Charcoal. Secondly, to draw Circles, Ovals, and Ar-

VIII. *Pastils* are made of several Colours to draw withal, upon coloured paper or parchment. Thus,

Take Plaster of Paris or Alabaster calcined, of the colour which you intend to make your pastils with, ana q. s. grind them first asunder, then together, and with a little water make them into paste, then with your hands roul them into long pieces like black-lead pencils, then dry them moderately in the Air: being dried, when you use them, scrape them to a point like an ordinary pencil.

And thus may you make pastils of what colour you please, fitting them for the faces of Men or Wo-

men, Land-skips, Clouds, Sun-beams, Buildings and shadows.

IX. To the former add good Copies, Patterns, and Examples of good Pictures, and other draughts, without which it is almost impossible, that the young Artist should ever attain to any perfection in this Art.

*Those that desire to be furnished with any excellent Patterns, Copies or Prints, may have of all sorts, whether of Humane shape, Perspective design, Land-skip, Fowls, Beasts, Fishes, Insects, Plants, Countries, or any other Artificial figures, exquisitely drawn, at very reasonable rates, where this Book is to be sold.*

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### CHAP. III.

#### *Of the precepts of Drawing in General.*

I. **B**E sure to have all the necessaries aforesaid in readiness, but it will be good to practise as much as may be without the help of your Rule and Compasses; it is your eye and fanlie must judge without artificial measurings.

II. *Then first begin with plain Geometrical figures, as Lines, Angles, Triangles, Quadrangles, Polygons, Arches, Circles, Ovals, Cones, Cylinders and the like. For these are the foundations of all other proportions.*

III. The *Circle* helps in all orbicular forms, as in the Sun, Moon, &c. the *Oval* in giving a just proportion to the face and mouth; the mouth of a Pot or Well, the foot of a Glass, &c. the *Square* confines the Picture

you



you are to Copy, &c. The *Triangle* in the half-face; the *Polygone* in Ground-plats, Fortifications and the like; *Angles* and *Arches* in Perspective; the *Cone* in Spires-tops of Towers and Steeples: the *Cylinder* in Columns, Pillars, Pilasters, and their Ornaments.

IV. Having made your hand fit and ready in General proportions, then learn to give every object its due shade according to its convexity or concavity, and to elevate or depress the same, as the object appears either nearer or farther off the light, the which is indeed the life of the work.

V. The second practice of Drawing consists in forming fruits, as Apples, Pears, Cherries, Peaches, Grapes, Strawberries, Peascods, &c. with their leaves: the imitation of flowers, as Roses, Tulips, Carnations, &c. Herbs, as Rosemary, Tyme, Hysop, &c. Trees, as the Oak, Fir, Ash, Walnut, &c.

VI. The third practice of Drawing imitates, 1. *Beasts*, as the Lamb, Elephant, Lion, Bear, Leopard, Dog, Cat, Buck, Unicorn, Horse, &c. 2. *Fowls*, as the Eagle, Swan, Parrot, Partridge, Dove, Raven, &c. 3. *Fishes*, as the Whale, Herring, Pike, Carp, Thorn-back, Lobster, Crab, &c. of which, variety of Prints may be bought at reasonable rates.

VII. The fourth praxis imitates the body of Man with all its Lineaments, the Head, Nose, Eyes, Ears, Cheeks, Hands, Arms, and shadows all exactly proportional both to the whole, and one to another, as well to situation as Magnitude.

VIII. The fifth praxis is in Drapery, imitating Cloathing and artificially setting off the outward Coverings, Habit and Ornaments of the Body, as Cloth, Stuff, Silk and Linnen, their natural and proper folds; which although it may seem something hard to do, yet by much exercise and imitation of the



choicest Prints will become facil and easie.

IX. In drawing of all the aforegoing forms, or what ever else, you must be perfect, first in the exact proportions: secondly in the general or outward lines, before you fall to shadowing or trimming your work within.

X. In mixed and uncertain forms, where Circle and Square will do no good (but only the *Idea* thereof in your own fanſie) as in Lions, Horſes, and the like; you must work by reason in your own judgement and so obtain the true proportion by daily practice. *Thus;*

*Having the shape of the thing in your mind, first draw it rudely with your coal, then more exactly with your lead or pencil; then peruse it well, and consider where you have erred, and mend it, according to that Idea, which you carry in your mind; this done, view it again, correcting by degrees the other parts, even to the least Jota, so far as your judgment will inform you; and this you may do with twenty, thirty, forty or more papers of several things at once: having done what you can, confer it with some excellent pattern or print of like kind, using no rule or compass at all, but your own reason, in mending every fault, giving every thing its due place, and just proportion; by this means you may rectifie all your errors, and step an Incredible way on to perfection.*

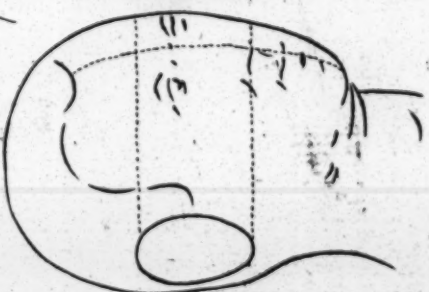
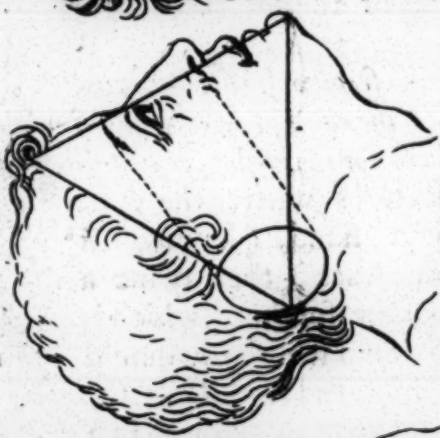
CHAP. IV.

*Of Drawing the Face of a Man.*

**I.** IN Drawing of the face you are first to observe its motion whether upwards, downwards, forwards, or sideways; whether it be long or round, fat or lean, great or little.

For if it be fat, the cheeks will seem to swell: if lean, the jaw-bones will stick out, and the cheeks fall in; but if neither too fat nor too lean, it will be for the most part round.

**II.** Touch lightly the features where the eyes, mouth, nose, and chin should stand, (having first drawn the circle or oval of the face) then make a stroak down from that place of the forehead which is even with the Chin, coming down where you should place the middle or tip of the nose, and middle of the mouth, which stroak must be made straight down in a full right face, but arched or oval in an oblique face, leaning that way towards which the face doth turn: then cross the stroak about the middle of the eyes, either with a straight line in a right face, or with a curved either upwards or downwards according to the present action or posture of the face; then make another answerable to that, where the end of the nose should come; and another for the mouth, that it be not made crooked.



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III. Then if the face look upwards toward heaven, or downwards towards the earth, let the Eyes, Nose, Mouth, and Brows look accordingly with it; and now proceed to the placing of the features.

IV. In a just proportioned face, the distances, 1. between the top of the forehead and the eye-brows, 2. between the eye-brows and the bottom of the nose, 3. between the bottom of the nose and the bottom of the Chin, are equal.

V. In drawing the utmost Circumference of a face, take in the head and all with it, lest you be deceived in drawing the true bigness.



VI. Then







VI. Then consider all those chief touches which give life to a face, adding grace thereto, and something discovering the disposition of the mind.

*So the mouth extended and the corners a little turning up, shews a smiling countenance : the eye-brow bending, and the forehead and top of the nose between the eyebrows, wrinkled, shews one frowning : the upper eye-lid coming something over the ball of the eye, shews one sober and stayed, with many other touches which give life and spirit to a face, which in good paints, by little and little, and diligent observation you will at last find out.*

VII. The distances between the eyes, is the length of one eye in a full face, but in a three-quartred or half-face, it is lessened proportionably : and exactly underneath the corners of the eyes, place the nostrils.

VIII. Having given touches where the eyes, nose, mouth and chin should be placed, begin to draw them more exactly, and so proceed till the face be finished ; and then make the hair, beard, shadows, and other things about it.



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IX. Be sure to make the shadows rightly, and be sure not to make them too dark, where they should be faint; for that can never be made light again, and so the whole face is marr'd.

*The shadows are fainter and lighter in a fair face than in a swarthy.*

X. When you have finished the face, give here and there some hard touches with your pen where the shadows are darkeſt; then come to the ears and hair, wherein, having drawn the out-line, draw the principal curls, or maſter ſtroaks in the hair, which will be a guide to you in the leſſer curls, whoſe dependance are on them: always make the curls to bend exactly according to the pattern, that they may lie looſe, or careleſſly, and not as if they were ſtiff and forced; the curls being rightly drawn, in the laſt place ſtrike in the looſe hairs which hang ſcatteringly out of the Circles.

XI. In forming the Ear, deſcribe an Oval as it were, and proceeding lightly, joyn ſtroak to ſtroak, in ſuch manner as you ſee in the Figures; ſo that the ear may be entirely formed, without digreſſing from the bounds of Nature or Art.

XII. Laſtly, having practiſed a little by rule, and brought your hand in; in drawing of any thing, firſt ſtrike the out-ſtroaks, principal veins, and muſcles lightly, and afterwards ſhadow them, ever following exquisite patterns and prints, which will both encrease your judgment, and bring command to your hand.



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CHAP. V.

*Of the Extreme parts.*

I. IN drawing the hands, draw not all the joints, veins or other things to appear plainly, but only lightly and faintly, and strike out the bigness of the hand, and the manner of its turning with faint touches, and not with hard strokes; then that being done right, part the fingers according to the pattern with like faint strokes; then mark that place where any of the fingers do stand out from the others, with a faint resemblance: this done, proceed to draw it more perfectly, making the bending of the joints, the wrists and other principal things more exactly; and lastly, go over with it again, drawing every small bending or swelling of the fingers, nails, knuckles and veins, so many as do appear.

II. Learn by good prints the just proportions of the hands, with their equal distances; observing this rule, that according as it turns one way or another, to shorten proportionally as they appear to the eye.

*For so much as it turns away from our eye, so much it loses in proportion, yea sometimes a whole finger, two or three or more is lost to our sight, which you must accordingly answer in your draught.*

III. In drawing of the feet, the same rules which we even now enumerated, at the first and second Section of this Chapter, are to be understood here.





## C H A P. VI.

*Of Drawing the whole Body.*

**I.** First begin with the head, and be sure to give it its just proportion, answerable to what you intend the whole body shall be; then draw the shoulders in their exact breadth; after them, the trunk of the body: beginning at the Arm-pits, and so drawing down to the Hips on both sides, observing withal the exact breadth of the Waste; Lastly, draw the legs, arms and hands, exactly to your pattern.

**II.** But first draw with a coal, and that very lightly and faintly, drawing nothing perfect (that you may the easier mend it if it be amiss) and then afterwards finish one thing after another as curiously as you can.

**III.** Let the parallel sinews, muscles, veins and joints, be placed opposite one to another in a straight line (as shoulder to shoulder, hip to hip, knee to knee, &c.) for which purpose draw straight cross lines to guide you therein; observing that which way soever the body turns or bows, these lines may answer accordingly.



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IV. Let all perpendicular joynts, and parts also, be placed in a right line one under another (as they are in your pattern) for which end, draw a straight line (if the body be straight) from the throat through the middle of the breast and privities, to the feet, to which line draw all those particular points parallels, that the body may not appear crooked or awry.

V. In bowings and bendings of the body, let the extuberance of the outward part be just equal to the compression of the inward part: making all things of an equal proportion; that as opposite parts may be equal (as the arm to the arm, leg to leg, &c.) so every part may be proportionable to each other, (as the hand not too big for the arm, nor the arm for the body, nor the body for the legs, &c.) only with this difference, that (as the one part may appear fully to the eye, or the other may turn away either in part, or in whole, or be seen side-way) it be made so much less than the other, by so much as it turns away from the sight.

VI. As you observe a just proportion in bigness, so also in length, that as every opposite part be of equal length, so that each part may not be too long one for another, but according to the proposed magnitude: And in this case that if the body be awry, or any ways hid, those parts may shorten accordingly, to what is out of sight.

VII. Lastly, Observe the just distance of one thing from another, for by that means you will be more exact in your draught; and, in short time, perfectly imitate your pattern or nature.

C H A P. VII.

*Of Drawing a Naked Body.*

**I.** IN drawing after the life, as there are variety of faces, so no certain Rules can be delivered for the same ; yet the following precautions may be useful.

**II.** Draw out the head in an Oval , one fourth part for the hair ; one fourth part for the forehead and brows ; one fourth for the nose ; and the last for the mouth and chin.

**III.** Having drawn out the head, measure out eight times the length of the head (the head making one of the eight parts ) and draw a straight line from the top of the head to the sole of the foot.

**IV.** One heads length from the chin is for the breast ; the next eighth part reacheth to the navel ; the fourth part to the privities ; the fifth part to the middle of the thigh ; the sixth part to the lower part of the knee ; the seventh to the small of the leg ; and the eighth part to the heel.

**V.** The muscles you must observe to draw exactly as they are in the life : the breadth of the shoulders, is about two measures of the head : the breadth of the hips , two measures of the face : the arms stretched out, are just the length of the whole figure, the breasts also accounted ; but without the breasts they are but six.

**VI.** The arms hanging straight down reach within a span of the knee : the length of the hand is the just length of the face. See the two figures following.

VII. Observe first to draw the head exactly, and next, the shoulders in their just breadth : then draw the trunk of the Body, and the rest as at the first Section of the sixth Chapter.

VIII. Be sure to place the joints, sinews, and muscles in their natural places, and also proportionally, in respect of Magnitude, Similitude, and Parts : lest it seem crooked and deformed.

IX. See that every parallel joint bend moderately, so as to answer in nature its opposite.



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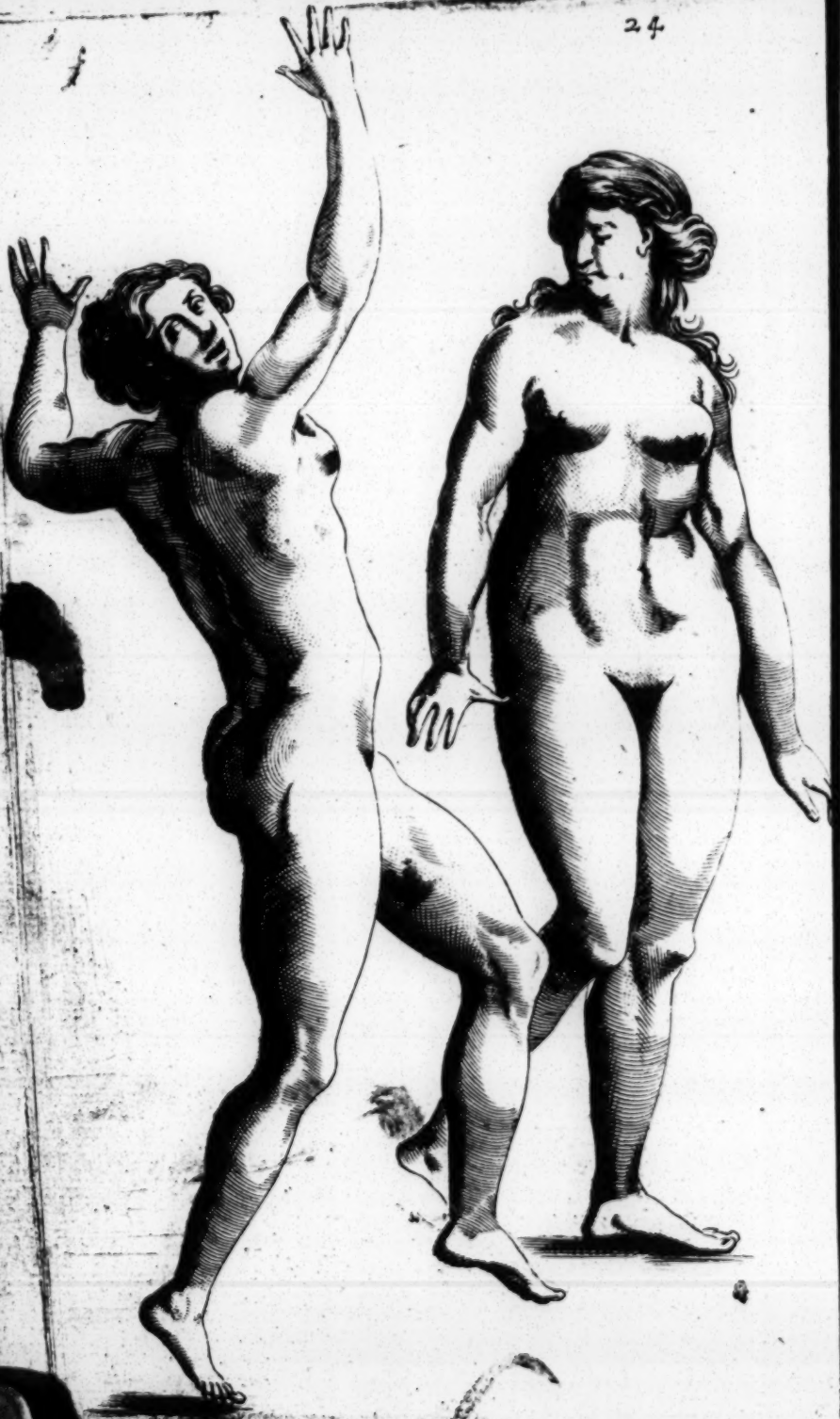
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C H A P. VIII.

*Of Shadowing a Naked Body.*

**I.** The shadows of the neck, in a child or young woman, are very fine, rare, and hard to be seen. In a man, the sinews and veins are expressed by shadowing of the rest of the neck, and leaving them white: the shoulder is shadowed underneath: the brawn of the arm must appear full and white, shadowed on one side.

**II.** The veins of the back of the hand, and the knuckles are made with two or three hair strokes with a fine touch of the pen.

**III.** The paps of a man are shewed by two or three strokes given underneath: in a woman with an orbicular shade, somewhat deep; the ribs retain no shadow, except you represent one lean or starved.

**IV.** The

IV. The belly is made eminent by shadowing underneath the breast bone and the flank : The brawn of the thigh is shadowed by drawing small hair stroaks from the hip to the knee, and crossed again overthwartly.

V. The knee is to be finely shadowed underneath the joint ; the shin-bone appears by shadowing one half of the leg with a single shadow.

VI. The ankle-bone appears by shadowing a little underneath ( as in the knees ) and the sinews thereof must seem to take beginning from the midst of the foot ; and to wax bigger as they grow nearer to the toes.

VII. Lastly, the shadows of the foot must take place according as reason and occasion requires, for which ( as also in all the former precepts ) the having of good prints will be no small advantage unto you.

## CHAP. IX.

### *The way and manner of Shadowing.*

**I**F it be a surface only it is best shadowed by drawing lines ( either straight or oblique, according as the superficies is ) through the better half thereof.

II. If it be in a body, it is a double shadow, and is used when a superficies begins to forsake your sight, as in Columns and Pillars, where it is double darkned, and representeth to the eye, as it were the backside, leaving that unshadowed to the light.

III. The treble shadow is made by crossing over again the double shadow, and is used for the inward parts of things, as in clefts of the earth, wells, caves, the insides of pots, cups and dishes.

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IV. In shadowing, let the shadow always fall one way, that is, on the same side of the body; leaving the other to the light.

*So in drawing a man, if I begin to shadow his right cheek, I must shadow the right part of his neck, arm, side, thigh, leg, &c.*

V. But if the light side of the body be darkned by the opposition of some other body standing between the light and it, it must receive a contrary shadow according as the light is obfuscated.

*So if three pillars stand together, that in the midst must receive a shadow on both sides.*

VI. All circular bodies must have a circular shadow (by the first Section of this Chapter) according to their form or appearance, and the orbicular shadow of the object which casteth it.

VII. Let your shadow grow fainter and fainter, according to the greatness of the distance from the opacous Body shadowing.

*And the reason is, because all shadows are pyramidal, in which case, space of place prevails with the light against the shadow.*

VIII. Where contrary shadows concur, let the meanest and most solid body be first served; and in double and treble shadows, let the first lines be very dry for fear of blotting, before you cross them.

IX. All perfect lights receive no shadow at all; but being manifest, are only to be made apparent by that body which receives them; whose shadow must be according to the efflux of light; but the colour of the light ought to agree with the medium which receives it, whether it be Air, Crystal, Water, Amber, Glass, Transparent wine, or the like.

## C H A P. X.

*Of Expressing Passions in the Countenance.*

**I.** *L*ove is expressed by a clear, fair and pleasant Countenance, without clouds, wrinkles, or unpleasant bendings : giving the forehead an ample height and breadth with majestick grace ; a full eye with a fine shadow at the bottom of the eye-lid, and a little at the corner : a proportionable nose ; nostrils not too wide : a clear cheek made by shadowing of it on one side ; and a smiling mouth made by a thin upper lip, and shadowing the mouth-line at the corners.

**II.** *Fear* is expressed by making the eyes look hollow, heavie and downward, thin falln cheeks, close mouth, and staring careless hair about the ears.

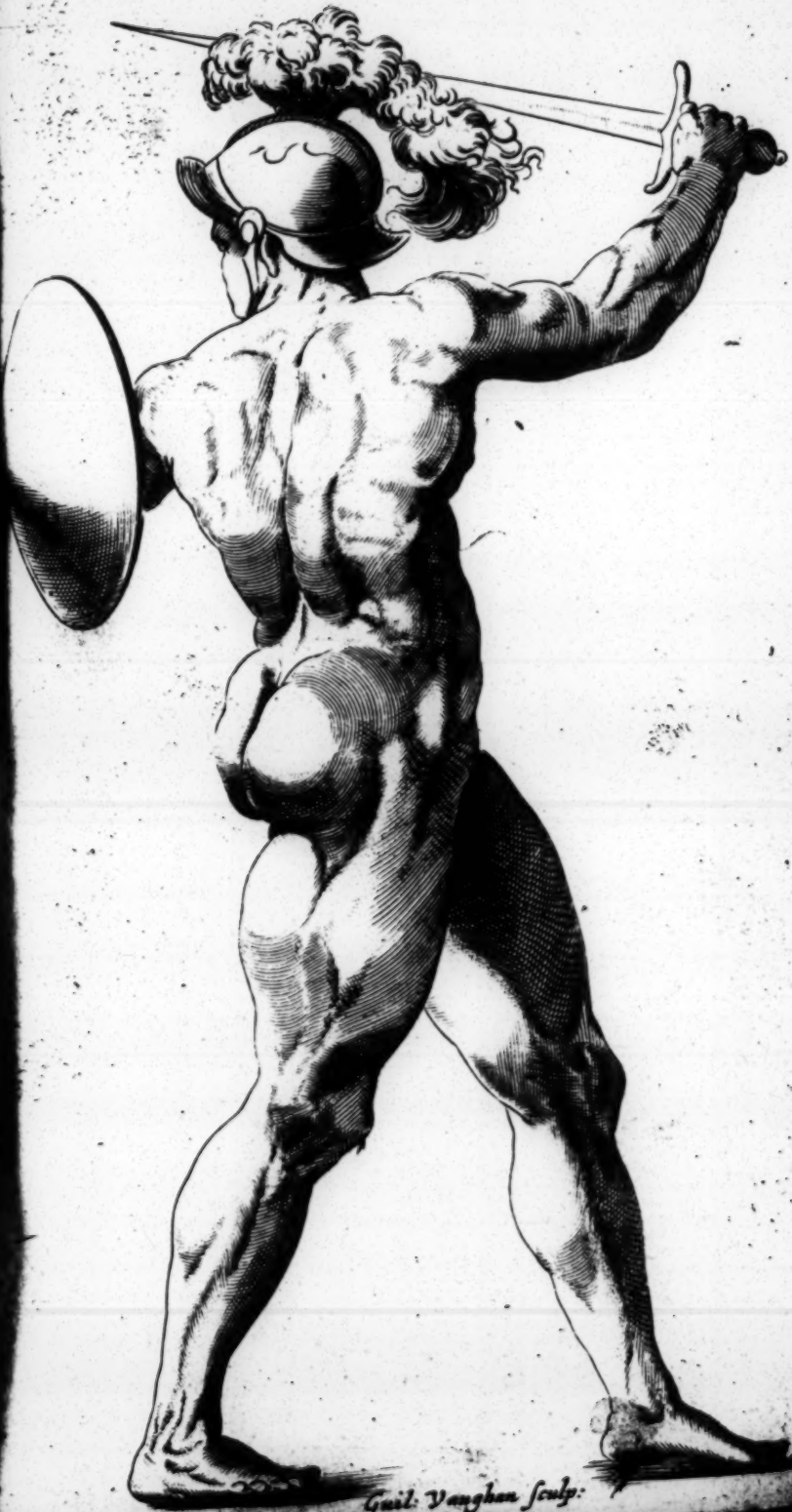
**III.** *Envie* is best decyphred by the only hanging of the cheeks, and a pale countenance ; and sometimes by grinning of the teeth.

**IV.** Let every passion be represented according to the outward appearance thereof, as it is in those persons in whom it reigns ; observing the rules at the sixth Section of the fourth Chapter.

## C H A P. XI.

*Of Humane proportion.*

**I.** **T**HE length of an upright body is equal to eight times the length of the face or head : The arm hanging straight down, reacheth within a span of the Knee :



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nee : The length of the hand must be the length of the face : The arms extended must be the just length of the body.

II. Those parts of the body near to the Eye must be made greater and longer than those farther off, (because the eye judgeth so of them) and according to the distance from the eye, so must you vary from that which is otherwise the real true proportion of those parts.

III. In foreshortning you must take things as they appear to the eye, and not to draw the full proportion of each part, but to shorten all, according to the rate or reason which is obfuscated.

*So if you would draw a ship foreright, there can appear but only her forepart (for the rest being hid cannot be expressed : ) the like of an horse looking full in my face, or a man lying along ; I must here of necessity foreshorten, to express the Visual property : And in this case your eye and reason must be your chief guide to give the true reason and measure of these appearances, whether in Drawing, Limning or Painting.*

IV. The use of this foreshortning is to express all manner of actions in man or beast ; to represent many things in a little room ; to shew at one view to the eye and mind, the whole body of a temple, with all its arches and pillars whether the inside or outside, as also the sundry sides of Cities, Castles and Forts, and such like.

Lastly, That in every case you make Nature the pattern of all draughts, so that nothing be expressed, but what doth agree and accord with nature ; and that nothing be either forced beyond nature, nor yet any thing to come short of nature.

*As if in drawing the picture of a man, be sure you draw not such a posture as is impossible for him to imitate with his natural body.*

## C H A P. XII.

*Of Drapery.*

I. **D**raw the out-lines of the Garment lightly, and herein be careful, for the whole grace of the picture lies there; then draw the greatest folds first, and stroak those into lesser, and be sure they cross one another.

II. Suite your garments to the body, and make them bend with the body, according as it stands in or out, streight or crooked, or turns one way or another: the closer the garment fits to the body, the narrower and smaller must the folds be.

III. All your folds must consist of two lines and no more, which you may turn with the garment at pleasure, shadowing the innermost deeper, the outermost more light; and if the folds be never so curiously contrived, spare not to shadow them (if they fall inward from the light) with a double or treble shadow, as the occasion requires.

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IV. The greater folds must be continued through the whole garment, the lesser you may break off and shorten as you please.

V. The shades of silk and fine linnen, are very thick and small, which require little folds and a light and rare shadow, commonly but double at most; and so also fine Drapery requires more and sharper folds than coarse.

VI. That part of a garment which fits close to the body, must not be folded at all, but only sweetly shaded, to represent the part of the body which lies under it.

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VII. Observe



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VII. Observe the motion of the wind and air, for driving loose apparel all one way, drawing that part of the garment first which lies highest and closest upon the body, before you draw the looser part that flies off from the body, lest by drawing the loose part of the garment first you should be out, and so place the body crooked or awry.

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CHAP. XIII.

*Of Mixed and Uncertain Forms.*

**I**F Or the drawing the form of any beast, begin with your lead or coal at the forehead, drawing downward the nose, mouth, upper and nether chop, ending your line at the throat; then viewing it again where you begun, from the forehead, over the head, ears and neck, continuing till you have given the full compass of the buttock, then mark out the legs and feet: Viewing it again, touch out the breast with the eminency thereof; Lastly, finish the tail, paws, tongue, teeth, beard, and several shadows.

II. In drawing beasts you must be well acquainted with their shape and action, without which you shall never perform any thing excellent in that kind: and here if you draw it in an Emblem or the like, you ought to shew the Landskip of the Country natural to that beast.

III. In birds begin also the draught at the head, (and beware of making it too big) then bring from under the throat the breast line down to the legs, there stay, and begin at the pinion to make the wing, which being joined to the back line will be presently finished:

the eye, legs and train must be at last, letting always (in birds as in beasts) the farthest leg be shortest; their feathers (as the hair in beasts) must take their beginning at the head very small, and fall in one way backwards in five ranks, greater and greater to the conclusion.

IV. Insects, as flies, bees, wasps, grasshoppers, worms, and such like, are easie to be drawn and not hard to be laid in Colours; in doing these, it will at first be absolutely necessary to have the living pattern before your eyes.

V. To draw a flower, begin from the boss, tuft or wart in the middle; as in a Rose or Marigold, with the yellow tuft, which being made, draw lines equally divided, from thence to the greatest compass or extent of your flower: you may draw them either fully open or in the bud, and laden with dew, wet, and worms, and then you may draw rudely with the coal or lead the leaves afterwards, giving them their veins or jaggedness,

VI. To take the natural and lively shape of the leaf of any herb or tree.

*First, take the leaf that you would have, and gently bruise the ribs and veins on the back-side of it: afterwards wet the side with linseed oyl, and then press it hard upon a piece of clean white paper, and so you shall have the perfect figure of the said leaf, with every vein thereof so exactly exprest, as being lively coloured it will seem to be truly natural.*



## C H A P. XIV.

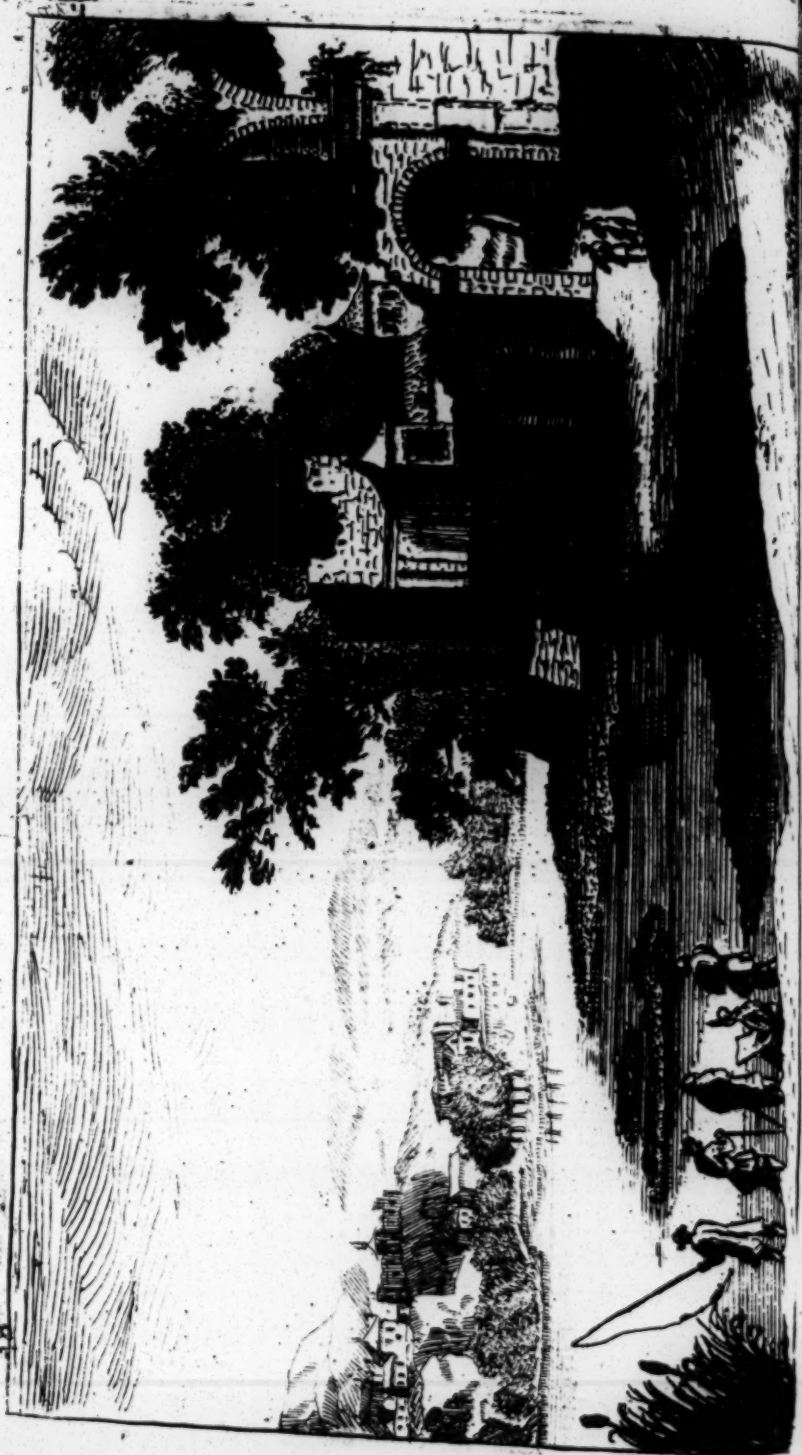
## Of Landskip.

I. **L**andskip is that which expresseth in lines the perfect vision of the earth, and all things thereupon, placed above the horizon, as towns, villages, castles, promontaries, mountains, rocks, valleys, ruines, rivers, woods, forests, chases, trees, houses and all other buildings, both beautiful and ruinous.

II. First, Always express a fair horizon, shewing the heavens, cloudy or clear, more or less according to the occasion; and if you express the Sun, let it be either as rising or setting, and as it were behind or over some hill or mountain.

*The Moon and Stars are seldom or never depicted, unless it be in representation of twilight; because all things are supposed to be seen by day.*

III. Secondly, If you express the Sun, make his light to reflect upon all the trees, hills, mountains, rocks, or buildings; shading the contrary side; after which manner also shadow clouds, mists, and the like: making the shadows to fall all one way.



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IV. Thirdly, be very careful to augment or lessen every thing proportionably to their distance from the eye, making them either bigger or lesser.

V. In expressing things at large distances, as ten, twenty or thirty miles off; where the object is hard to be discerned, as whether it be Temple, Castle, House or the like; shew no particular signs thereof, or any eminent distinction; but rather as weakly, faintly, and confusedly as the eye judgeth of it.

VI. If Landskips be laid in Colours, the farther you go, the more you must lighten it with a thin and airy blew, to make it seem as it were afar off, beginning at first with a dark green, so driving it by degrees into a blew, according to the distance.

VII. Make your Landskip to shoot (as it were) away, one part lower than another, making the nearest hill or place highest, and those that are farther off, to shoot away under that, that the Landskip may appear to be taken from the top of an hill.

VIII. Let every thing have its proper motion, as *in trees* when they are shaken with the wind, making the smaller boughs yielding; the stiffer less bending: *in clouds* that they follow the winds: *in rivers*, the general current, and flashing of the water against the boat sides: *in the Sea*, the waves and other proper agitations; and lastly, *let every thing* which moveth whether essentially or accidentally, have its proper representation.

IX. Let your work imitate the season you intend it for.

*As if you intend it for a winter picce, represent selling of wood; sliding upon the Ice; fowling by night; hunting of bears or foxes in the snow; making the trees every where naked or laden with the hoar frost; the earth bare without greenness, flowers or cattel; the air thick;*  
water

water frozen, with carts passing over it and boys upon it, &c.

X. Lastly, let every site have its proper *parerga*, adjuncts, or additional graces, as the Farm house, Wind-mill, Water-mill, Woods, Flocks of sheep, Herds of cattel, Pilgrims, ruines of Temples, Castles, and Monuments; with a thousand such other only proper to particular subjects.

## CHAP. XV.

### *Of Diapering and Antique.*

I. **D**iapering, is a tracing or running over your work again when you have, as it were, quite done, with damask branches, and such like.

*It is used to counterfeit cloth of gold, silver, damask, velvet, chamlet and the like, with what branch and in what fashion you please: it is derived from the Greek word διαμεγω, transeo, to pass over, and only signifies a light passing over the same again.*

II. If you Diaper upon folds, let your work be broken off accordingly, and taken as it were by the half.

*For reason sheweth that the fold covereth something which cannot be seen by reason of it, which if it was drawn out at length would all appear plain.*

III. Let the whole work be *homogene*; that is, let the same work be continued throughout the whole garment, setting the fairest branch in the most eminent and perspicuous place, causing it to run upwards, for else your work would be ridiculous.

IV. You



*Of taking the perfect draught of a Picture. 41*

IV. You may either shadow the ground and leave your work white; or shadow your work and leave the ground white; and as you shall please in this kind, your filling may be with small pricks, which will shew very fair.

V. Antique (*ab antes*) are butteresses whereon the building is stayed, as also the outwardmost ranges, used in fore-fronts of houses, in all manner of Compartments, curious Architecture, Armour, Jewels, and Columns.

VI. The form of it is (only for delights sake) a general or irregular composition of men, beasts, birds, fishes and flowers and such like, without either rule or reason.

VII. Lastly, observe the continuation of one and the same work, through the whole piece, without the least change or alteration.

*As if it be naked boys, playing, lying, sitting, or riding upon goats, eagles, dolphins and the like; strings of pearl, Satyrs, Tritons, apes, dogs, oxen, bearing or drawing fruits, branches, or any wild fancies after your own invention, with a thousand such other idle toys; be sure you observe the continuation.*

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CHAP. XVI.

*To take the perfect draught of any Picture.*

I. TAKE a sheet of fine Venice paper, wet it all over with linseed oyl on one side thereof, which then wipe off as clean as you can; let the paper dry, and lay it on any printed or painted picture; then with a black-lead pen you may draw it over with ease:

case : put this oyled paper upon a sheet of clean white paper, and with a little pointed stick or feather out of a swallows wing, draw over the stroaks which you drew upon the oyled paper ; so shall you have the exact form upon the white paper, which may be set out with colours at pleasure.

II. *Or thus*, The picture being drawn as before in the oyled paper, put it upon a sheet of white paper, and prick over the drawing with a pen : then take some small coal, powder it fine, and wrap it in a piece of some fine linnen, and bind it up therein loosely, and clap it lightly, all over the pricked line by little and little, and afterwards draw it over again once or twice, with pen or pencil.

III. *Or thus*, Rub a sheet of white paper all over on one side with black lead, or else with vermilion mixed with fresh butter ; lay the coloured side upon a sheet of white paper, then lay the picture you would copy out upon the other side of the coloured paper, and with a small pointed stick or swallows quill, go over all the stroaks of your picture, and it will be exact on the white paper.

IV. *Or thus*, Lay a piece of Lanthorn horn upon the picture, then draw the stroaks of your picture with a hard nibbed pen upon the horn ; and when it is dry, breath upon the horn twice or thrice, and press it hard upon white paper a little moistned.

V. *Or thus*, Take an oyled sheet (as at the first Section of this Chapter) rub one side of it with lamb black or lake ; lay it upon a sheet of fair paper with the coloured side downwards, and upon it lay the picture you would copy out, and trace it over with a swallows feather.

VI. *Or thus*, Take fine lake mixed with linseed eyl, and draw with it, instead of Ink, all the out-stroaks

*Of extending or contracting a Picture.* 43

oaks of any picture, and other material parts; then set the contrary side of the picture and press it hard on a sheet of paper, and it will leave behind it all that which you drew over.

VII. *Or thus*, Grind Printers black fine, and temper it with water, and with a pen dipt in it, draw over the out-lines and master strokes: wet then some white paper with a sponge or the like, and press it hard thereon; and you shall have the strokes you drew upon the white paper.

VIII. *Or thus*, Lay the print (the back-side of it) upon a clear glass, or oyled paper, then lay a clean paper upon the print; hold it up against the light, so will you see all the strokes which you may draw out, and shadow also if you please.

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C H A P X V I I.

*To extend or contract a Picture keeping the proportion.*

**E**Ncompass your picture with one great square, which divide into as many little ones as you please: this done, according as you would have your picture either greater or less, make another square greater or less, which divide into as many equal squares, which be drawn with a black lead plummet.

Take your black lead pen, and draw the picture by little and little, passing from square unto square (by the example of the pattern) until you have gone all over with it: observing, that in what part of the square the picture lies, you draw the like part in the square answerable thereto, till you have finished the whole.

III. Then

III. Then draw it over with a pen, in which second drawing of it you may easily mend any fault, and shadow it at pleasure.

IV. Lastly, When it is thoroughly dry, rub it over with the crum of white-bread, and it will take off all the black lead stroaks, so will your draught remain fair upon the paper.

## CHAP. XVIII.

### *To express the Powers.*

I. **E**ternity, It is expressed in the form of a fair Lady, having three heads, signifying time past, present, and to come; in her left hand a circle, pointing with the forefinger of her right hand up to Heaven: the circle signifies she hath neither beginning nor end.

*In the Medals of Trajan she was figured red, sitting upon a Sphear, with the Sun in one hand, the Moon in the oiber (by her sitting is signified perpetual constancy.) In the Medals of Faustina, she is drawn with a vail; and in her right hand the Globe of the World. Boccace writing of the progeny of the Gods, saith that the Ancients derived it from Demogorgon, as the principal and first of them all, who inhabited in the middle or center of the earth, encircled round about and circumvested with a dark and obfuscate cloud, breathing from his mouth a certain liquid humidity. But however what eternity is, the name doth clearly discover, containing in it self all worlds and ages, and not limited or measured by any space of time. Claudius describes it by a serpent that compasseth round with her body the Cave or Den wherein it lieth, so as making a*  
ircle,



circle, she holds in her mouth the end of her tail, which with the Egyptians was the emblem of a year.

*All in a circle thus she sits involv'd,  
Whose firm tenacity is ne'er dissolv'd:  
She sends forth times, and them recalls again.  
Ages to come, and past she doth retain.*

But according to Boccace, as Eternity hath an absolute command over all times, so she lives far hence in some remote and unknown vale, where humane steps never approach, but is even unfound out of the celestial inhabitants, whose happy souls, who stand before the presence of the greatest, that only knows all things.

II. Time, It is drawn standing upon an old ruine, winged, and with Iron teeth. Or thus, An old man in a garment of stars; upon his head a garland of roses; ears of corn, and dry sticks; standing upon the Zodiack, with a looking glass in his hand; two children at his feet, the one fat, the other lean, writing both in one book; upon the head of one, the Sun, upon the other the Moon. Or thus, An old man, bald behind, winged, with a fithe and an hour glass, having a lock of hair on his forehead.

III. Fate, A man in a fair, long, flaxen robe, looking upwards to bright stars encompassed with thick clouds, from whence hangs a golden chain.

IV. Fortune, A naked Lady having an Insign or Sail overshadowing her, standing upon a globe or ball.

Lactantius saith that Fortune is a vain, idle and senseless name, shewing forth mans weakness in attributing any thing thereto: which Marcus Tullius confirmeth, where he saith that this name of Fortune, was first brought in to cover the ignorance of man. Alexander Neopolitanus saith that at Prenestes in a temple she was depicted in

*in the shape and form of two sisters, both conjoined in one and the same statue. Pausanius saith that her most ancient statue was that which Bupalus made in Greece in shape of a woman, upon whose head was a round ball, and in one of her hands a Cornucopia. She is called the blind Goddess, and partial Lady, by reason of the bestowing of her unconstant and mutable favours.*

Imperious ruler of the worlds designs,  
 Lady of solace, pleasure and of pains :  
 Like Tennis balls thou beat'st us to and fro,  
 From favours to disgrace, from joy to woe ;  
 From wars to peace, from rule to be commanded :  
 But with unconstancy thou now art branded.

*Macrobius saith she was set forth with wings on her shoulders, ( to shew that she was always at hand among men ) had by her side the rudder of a Ship ( to shew that she doth rule and command ) her self placed upon a wheel, holding in her right hand a golden ball, and in the other a whip ; shewing where she smiled, wealth and honour, and where she frowned, crosses and misery should follow.*

*In Egypt Fortune was depicted like a lady turning a great glass wheel, on whose top was many men playing, others a climbing up ; and others having attained it, precipitating themselves and falling down back again.*

V. Equality, A Lady lighting two torches at once.

VI. Victory, Is expressed by a Lady clad all in Gold, in one hand a helmet, in the other a pomegranate : by the helmet is meant force ; by the pomegranate unity of wit and counsel.

*Augustus drew her with wings ready to fly standing upon a globe, with a garland of Bays in one hand, in the other a Coronet of the Emperor, with these words Imperator Cæsar.*

In the Medals of Octavius, she is drawn with wings, standing on a base, in one hand a palm, in the other a crown of gold.

VII. Peace, Is drawn like a Lady, holding in her right hand a wand or rod downwards towards the earth, over a hideous Serpent of sundry colours; and with her other hand covering her face with a veil, as both to behold strife or war.

Trajan gave a Lady, in her right hand an Olive branch; in her left a Cornucopia. In the Medals of Titus, a Lady having in one hand an olive branch, the other leading a Lamb and Wolf coupled by the necks in one yoke. The Olive is always the emblem of peace.

VIII. Providence, A Lady lifting up both her hands to Heaven with these words *Providentia Decrum*. Or thus, A Lady in a robe, in her right hand a Scepter, in her left a Cornucopia, with a globe at her feet.

IX. Concord, A Lady sitting, in her right hand a charger for sacrifice, in her left a Cornucopia, with the word *Concordia*. Or thus, A fair Virgin, holding in one hand a Pomegranate; in the other a Mirtle bunch.

The nature of these trees are such, that if planted though in good space one from another, they will meet and with twining embrace one another.

X. Fame, A Lady clad in a thin and light garment, open to the middle thigh, that she might run the faster; two exceeding large wings; garments embroider'd with eyes and ears, and blowing of a Trumpet.

XI. Destiny, A Lady, who with great fury, and exceeding celerity holds in her hand an Iron bow ready bent, aiming to strike fortune even at the very heart.

Destiny and fortune can never agree; and therefore as fortune flies from destiny, so destiny pursues fortune; for where destiny sets her foot, there fortune is as it were enchanted and conjured, as having no power, efficacy or virtue.

## C H A P. XIX.

*Of Vertues and Vices.*

I. **V**ERTUE is represented by *Hercules*, naked, with his Lyons skin, and knotted club, performing some one of his Labours; as offering to strike a dragon keeping an Apple tree; or holding in his hand three golden Apples.

*Hercules is nothing else but Vertue, his name in the Greek tongue is Ηερακλῆς, quasi ἥρας κλεός, Junonis gloria: vel quia κλησῆ τῆς ἥρας, celebrat aut commemorat Heroas, which is the property of Vertue: he is drawn naked to demonstrate her simplicity: by the dragon is set forth all manner of vices: by the Lions skin, magnanimity and greatness: by his Oaken Club, Reason and Policy: by its knottiness, the difficulty, pains and labour in seeking after vertue: by the three golden Apples, the three Heroical Vertues, Moderation, Content and Labour.*

II. *Piety is drawn like a Lady, with a sober countenance; in her right hand she holdeth a sword stretched over an Altar; in her left hand a Stork; and by her side is placed an Elephant and a Child.*

*The Stork is so called of σῶζω, the reciprocal or mutual love of parent and child, of which this bird was ever an Emblem, for the love and care she hath of her parents being old. The Elephant worships towards the rising of the Sun.*

III. *Hope is drawn like a beautiful child in a long robe hanging loose, standing upon tiptoes, and a tresfoyl or threeleaved grafs in its right hand, in its left an Anchor.*

*The loose vestment shews, she never pineth or binds truth; standing on tiptoes, shews she always standeth dangerously; the branch of tresfoyl shews knowledge (the ground of faith)*



faith) faith (the ground of hope) and hope it self.

IV. Mercy, a Lady sitting upon a Lion, holding in one hand a Spear, in the other an Arrow; which she seemeth to cast away.

In the Medals of Vitellius she sits with a branch of Bayes in her hand, and a staff lying by her.

V. Justice, a fair young Virgin, drawing after her, with her left hand, a black, hard, ill-favoured Woman, haling her by main force, and striking her over the face in a severe manner.

The young Virgin was Justice, the other Injuria: she is drawn young and a Virgin, to shew, that Judges and administrators of Law ought to be incorrupt and free from bribes, partiality or flattery, but just, constant and sincere.

VI. Felicity, a Lady sitting in an Imperial throne, in the one hand she holdeth a Caduceus or Rod, in the other hand a Cornucopia.

VII. Fruitfulness, a Lady sitting upon a bed, and two little Infants hanging about her neck.

VIII. Dissimulation, a Lady wearing a vizard of two faces, in a long robe of changeable colour; and in her right hand a Magpye.

IX. Security, a Lady leaning against a pillar, before an Altar, with a Scepter in her hand.

X. Calumnia, a beautiful, rich and young woman, approaching towards a Judge, gorgeous in her habit, with an angry, scornful and discontented look, and red and fire eyes; she holds in her left hand a flaming torch: and with her right she by force draws a young man by the hair of the head.

XI. Envie, a wonderful lean old man, with a pale and meagre face, in whose withered cheeks Age hath wrought deep furrows and wrinkles.

XII. Penitence, a Woman in vile, ragged and base attire, infinitely deploring her being: and bemoaning her self.

in passionate fits above all measure, continually weeping.

## C H A P. XX.

### Of Rivers.

**I.** Herein you ought to observe the Adjuncts and Properties of the same; which consists in some notable Accident done near them; some famous City, trees, fruits, or reeds situate upon their banks; some fish only proper to their streams; or recourse of shipping from all parts of the world.

II. Therefore you had best place the City upon their heads; their fruits in a *Cornucopia*; reeds, flowers, and branches of trees in their Garlands, and the like.

III. The River *Tyber*. It is expressed (in the *Vatican in Rome*) in a goodly Statue of Marble lying along (for so you must draw them) holding under his right arm a she Wolf, with two little infants sucking at her teats, leaning upon an Urne or Pitcher, out of which issueth its stream: in his left a *Cornucopia* of delicate fruits, with a grave Countenance and long beard; a garland of flowers upon his head; and resting his right leg upon an Oar.

IV. The River *Nilus*. It is seen (in the *Vatican*) cut out in white Marble, with a garland of sundry fruits and flowers, leaning with his left arm upon a Sphynx; from under his body issueth its stream; in his left arm a *Cornucopia* full of fruits and flowers on one side, with sixteen little children, smiling and pointing to the flood.

*The Sphynx was sometimes a monster which remained by Nilus: the Crocodile ἀπὸ τῆς κροκότου δειλιάειν, from his hatred of Saffron, the most famous monster of Egypt: the*  
sixteen

teen children, the sixteen cubits of height, the uttermost of the flowing of Nilus : their smiling looks, the profit of it, which glads the hearts of the Sun-burnt inhabitants.

V. The River *Tigris*. It was drawn like an old man (as the rest) and by his side a Tiger.

*This beast was given it as well for its fierce streams, as for the store of Tigers which are there.*

VI. The River *Ganges*. It bears the shape of a rude and barbarous savage, with bended brows, of a fierce and cruel Countenance, crowned with a palm, having, as other floods, his pitcher, and by his sides a *Rhinoceros*.

*This River runneth through India, and hath its head from a fountain in Paradise.*

VII. The River *Indus*. It is drawn with a grave and jovial aspect, with a garland of its country flowers, by its side a Camel (from *καμαί* :) it is represented pleasantly; grave, as an Emblem of the *Indian* pollicy.

*This is the greatest River in the world, receiving into its channel threescore other great and famous Rivers, and above an hundred lesser.*

VIII. The River *Thamesis*. In the house of an honourable friend, I saw the *Thames* thus drawn : A Captain or Soldier lying along, holding in his right hand a Sword, and under his arm the August tower : in the other a *Cornucopia* of all fragrances, with a Golden chain which held four Crowns ; and with this he encompassed the streams, from under which bending of his left arm they seemed to flow : his temples were adorned with Bays, the River was empaled on one side with Anchors, and on the other stood *Cæsar's Augusta*.

IX. The River *Arnus*. It is a famous River in *Italy*, drawn like an old man leaning upon his pitcher, pouring

ing out water: upon his head a garland of Beech, by his right side a Lyon, holding forth in his dexter paw a red Lilly or Flower-de-luce, the ancient Armes of the chief City of *Tuscany*.

*By the garland of Beech is set forth the great abundance of Beech-trees growing about Fafterona in the Appennines where Arnus bath his head.*

X. The River *Po* or *Padus*. It is depicted with an Ox's face, having a garland of Reeds or Poplar on his head.

*It is so called from the Sister of Phaeton, whom the Poets feign destroy'd with lightning, and drowned here: the head of the Ox, is from its horrid noise and roaring, whose crooked banks resemble the horns thereof; by the sides whereof grows much Reed and many Poplars.*

XI. The River *Danubius*. In the ancient Medals of the Emperour *Trajan* it is depicted with its head covered with a veil.

*It is so drawn because its head or first Spring is unknown. Aufonius saith,*

*Danubius perit caput occultatus in ore.*

XII. The River *Achelous*. *Ovid* describes it with a garland of Reeds, Willow, and the like: having two Urns or Earthen Pitchers, the one empty, the other casting out water; and upon its head two horns, the one whole the other broken.

*This River as it is the most famous of all Greece, so it divides Ætolia from Arcadia, and then falls into the Sea. This is fetch'd from the fable of Hercules who combated him in the likeness of a Bull, and broke one of his horns, for Deianiras sake, there turning both its streams into one, whereupon one of the Urns is empty.*

XIII. The



XIII. The River Niger. It is drawn like a black Moore, with Glory, or a Coronet of Sun-beams falling upon his Urne, having by its side a Lyon.

By the Sun-beams and black, is shewed the clime, lying under the torrid Zone, whose inhabitants are Blacks or Moors; the Lyon is that which the Country Mauritania and Barbary breed, being the fiercest in the World.

## CHAP. XXI.

## Of Nymphs.

I. ΝΥΜΦΗ, Nymphs, a Bride (from νεν & φάλμα as it were a fresh or new creature: or as some will have it from Nympha quasi Lympha, by changing L. into N. after the Dorick dialect: ) it is nothing else but an Allegory, from the Vegetative humidity, which gives life to trees, herbs, plants, and flowers, by which they grow and increase.

II. They are feigned to be the daughters of the Ocean, the mother of floods, the nurses of Bacchus, and goddesses of fields, who have the protection and charge of mountains, herbs, woods, meadows, rivers, trees, and generally of the whole life of man.

III. First, Νάπηξ, Nymphs of the Mountains.

Let them be drawn of a sweet and gracious aspect, in green mantles, girded about in the middle; and upon their heads garlands of honey-suckles, wild-roses, tyme and the like; their actions, dancing in a ring, making garlands or gathering flowers.

*They are so called from Νεπτός, the top of an hill, or woody valley.*

IV. *Secondly, Dryades, Nymphs of the woods.*

Draw these less fair than the former, of a brown or tawny complexion, hair thick like moss, and their attire of a dark green.

*They are so so called from Δρὺς an Oak, having their beginning with trees, and dying again with them.*

V. *Thirdly, Naiades, Nymphs of the floods.*

Draw them beautiful, with arms and legs naked, their hair clear as Crystal; upon their heads garlands of water-creffes, with red leaves: their actions, pouring out water.

*They are so called from Νέω to flow, or bubble as water doth.*

VI. *Thetis*, a Lady of a brown complexion, her hair scattered about her shoulders, crowned with a coronet of Periwinkle and Escallop shells, in a mantle of Sea-green, with chains and bracelets of Amber about her Neck and Arms, and a branch of red Coral in her hand.

VII. *Galatea*, a most beautiful young Virgin, her hair carelessly falling about her shoulders like silver threads, and at each ear a fair pearl with a double string of them (sometimes) about her Neck and left Arm, a mantle of pure thin and fine white, waving as it were by the gentle breathing of the air, viewing in her hand a sponge made of Sea-froth, *she is so called from γαλα, lac, milk.*

VIII. *Iris*, a Nymph with large wings, extended like to a semicircle, the plumes set in rows of divers colours, as yellow, green, red, blew or purple; her hair hanging before her eyes, her breasts like clouds, drops of water falling from her body, and in her hand *Iris*, or the Flower-de-luce.

Virg.

*Virgil* makes her the messenger of *Juno* ( where she is taken for the air ) when he saith, *Irin de Cælo misit Saturnia Juno.*

IX. *Nympha Diana* ; Let them be cloathed in white linnen to denote their Virginity, and their garments girt about them ; their Arms and Shoulders naked ; bows in their hands, and arrows by their sides.

X. *Aurora*, the Morning. A young Virgin with carnation wings and a yellow mantle ; in her forehead a star, and Golden Sun-beams from the Crown of her head, riding upon *Pegasus*, with a viol of dew in one hand, and various flowers in the other, which she scattereth upon the earth.

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C H A P. XXII.

*Of the Nine Muses.*

I. *Clio*. She is drawn with a Coronet of Bays ; in her right hand a Trumpet ; in her left a Book, upon which may be written *Historia* ; her name is from praise or glory.

II. *Enterpe*, Is crowned with a garland of flowers, holding in each hand sundry wind instruments ; her name is from giving delight.

III. *Thalia*. Draw her with a smiling look, and upon her Temples a Coronet of Ivy, a Mantle of Carnation embroidered with silver twist and gold spangles, and in her left hand a vizard ; her Ivy shews she is mistress of Comical Poësie.

IV. *Melpomene*. Draw her like a virago, with a majestick and grave countenance, adorn her head with Pearls, Diamonds and Rubies ; holding in her left hand

Scepters with Crowns upon them, other Crowns and Scepters lying at her feet ; and in her right hand a naked poniard, in a Mantle of changeable Crimson. Her gravity befits Tragick Poësie.

V. *Polyhymnia*. Draw her acting a Speech with her forefinger, all in white, her hair hanging loose about her shoulders of an orient yellow, upon her head a garland of the choicest jewels intermixt with flowers, and in her left hand a book, upon which let it be written *Suadere* ; her name imports memory, to whom the Rhetorician is beholden.

VI. *Erato*. She hath her name from *Ἔρως*, *Amor*, Love : draw her with a sweet and comely visage, her temples girt with Myrtles and Roses, bearing an heart with an Ivory Key ; by her side *Cupid*, winged, with a lighted torch ; at his back, his bow and quivers.

VII. *Terpsichore* ; a chearful visage playing upon some Instrument ; upon her head a Coronet of Feathers of sundry Colours, but chiefly green ; in token of the victory which the Muses got of the Syrenes, &c. by ynging.

VIII. *Urania*, A beautiful Lady in an azure robe ; upon her head a Coronet of bright stars ; in her right hand the Coelestial globe, and in her left the Terrestrial. Her name imports as much as heavenly ; *Urania cæli motus scrutatur & Astra*.

IX. *Calliope*. Upon her head draw a Coronet of Gold ; upon her left Arm Garlands of Bays in store, for the reward of Poets ; and in her right hand three books, upon which write *Homerus*, *Virgilius*, *Ovidius*.

The Muses had their names, as Eusebius saith, *ὡς τὸ μῦθος*, which is to instruct, because they teach the most honest and laudable disciplines.



CHAP. XIII.

Of the four Winds.

I. **E**urus, the East-wind. Draw a youth with puffed and blown cheeks (as all the other winds must be) wings upon his shoulders, his body like a Tawny Moor, upon his head a Red Sun.

II. Zephyrus, the West-wind. Draw a youth with a merry look, holding in his hand a Swan, with wings displaid as about to sing, on his head a garland of all sorts of flowers.

'Tis called Zephyrus quasi ζώνη φέρων, bringing life, because it cherisheth and quickneth.

III. Boreas, the North-wind. Draw it like an old man, with a horrid, terrible look; his hair and beard covered with snow, or the hoar-frost; with the feet and tail of a Serpent.

IV. Austro, the South-wind, is drawn with head and wings wet, a pot or urn pouring forth water, with which descend frogs, grasshoppers, and the like creatures which are bred by moisture.

CHAP. XXIV.

Of the Months of the Year.

I. **J**anuary must be drawn all in white, like snow or hoar frost, blowing his fingers; in his left arm a billet, and Aquarius standing by his side.

II. February is drawn in a dark skie colour, carrying in his right hand Pisces, or Fishes.

III. March is drawn tawny with a fierce look, a helmet

met upon his head, leaning upon a Spade: in his right hand *Aries*; in his left Almond Blossoms and Scions; and upon his arm a basket of Garden-seeds.

IV. *April* is drawn like a young man in green, with a garland of Myrtle and Hawthorn-buds, winged; in the one hand Primroses and Violets; in the other *Taurus*.

V. *May* is drawn with a sweet and lovely aspect, in a robe of white and green, embroidered with Daffadils, Haw-thorn and Blew-bottles; on his head a garland of white, red, Damask-roses; in the one hand a Lute; upon the forefinger of the other a Nightingal.

VI. *June* is drawn in a mantle of dark grass-green; upon his head a Coronet of Bents, King-cobs, and Maiden-hair; in his left hand an Angle; in his right *Cancer*; and upon his Arm a basket of Summer fruits.

VII. *July* is drawn in a Jacket of a light yellow, eating Cherries, with his face and bosome Sun-burnt; on his head a garland of Centaury and Tyme, on his shoulder a Sithe; with a bottle at his girdle, carrying a Lion.

VIII. *August* is like a young man of a fierce look, in a flame-coloured robe; upon his head a garland of wheat; upon his arm a basket of Summer fruits; at his belt a Sickle, bearing a Virgin.

IX. *September* is drawn in a purple robe, with a cheerful look; and on his head a Coronet, of white and purple grapes; in his left hand a handful of Oats, with a *Cornucopia* of Pomegranates and other Summer fruits; and in his right hand a ballance.

X. *October* is drawn in a garment of the colour of decaying flowers and leaves; upon his head a garland of Oak-leaves with the Acorns; in his right hand a Scorpion; in his left, a basket of Services, Medlars, and Chestnuts.

XI. *November* in a robe of changeable green and black:

black : upon his head, a garland of Olives with the fruit ; in his right hand *Sagittarius* : and in his left bunches of Parsneps and Turneps.

XII. *December* is drawn with a horrid aspect, clad in Irish rug, or course Freeze, girt about him : upon his head three or four night-caps, and over them a Turkish Turbant ; his nose red ; beard hung with Iceickle ; at his back a bundle of Holly and Ivy ; holding in Furred Mittens a Goat.

*Where note it will be good to give every month its natural and proper Landskip, not making blossoms and fruits upon trees in December ; nor a barren face of the earth and trees in June.*

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C H A P   X X V .

*Of Perspective in general.*

ΟΠΤΙΚΗ in Greek, *Perspectiva* in Latin, the *Art of seeing* in English ; is that by which we behold, contemplate, and draw the likenesses of all magnitudes, just in form and manner as they appear to the Eye.

II. The matter to be seen or speculated is a magnitude : the manner of the speculation is by radiations of Light, either direct, reflected or broken.

III. A magnitude is that which hath form ; and it is either lineal, superficial, or solid ; that is, either a complication of points, a complication of lines ; or a complication of superficieses.

IV. A line is a complication of points ; that is ( according to *Euclid* ) a length only without either breadth or thickness.

V. A superficies is a complication of lines ; that is a length

length having breadth without thickness.

*For as the continuation of points makes a line : so the couching of lines makes a superficies : which is only the laying of points cross wise.*

A solid is a complication of superficies ; that is, a length and breadth, having depth or thickness.

*And indeed it is nothing but the continuation of points upon a superficies either perpendicularly or bending.*

VII. The Contemplation of the Object, represents the matter to the mind, in the same manner as its outward appearance doth to the Eye.

*And from hence comes Judgment whereby the Artist is enabled to describe the same in lines ; and delineate it, according to its apparent or visual proportions.*

VIII. To draw or describe the Appearance in lines is the Active part of this Art, whereby the *Idea* conceived in the mind ( by sight and contemplation ) is brought to light.

IX. A radiation is a beam of light, conveyihg the likeness of the thing, to the Eyes, or sight ; and the Knowledge thereof to the mind or understanding.

*And this radiation is twofold, either external from the external light ; or intellectual from its being and power.*

X. *Direct radiations*, are those which consider the direct or straight beams, which pass between the Eye and the object.

*And this is the first kind of Perspective ; and is many times ( alone ) called the Opticks.*

XII. *Reflected Radiations*, are those which consider the reflection of beams, and their shape upon any polish'd body, as on a Globe, Cone, Cylinder, Pyramid, or any regular solid.

*And this is the second kind of Perspective, which is called the Art Catoptrica.*

XII. *Broken Radiations* are those which consider the



the breaking of beams, as they are to be seen through a glass or Crystal cut into several plains or superficies.

*And this is the third and last kind of Perspective which is called the Art Dioptrica.*

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C H A P. XXVI.

*Of the Active part of Perspective.*

**I.** **T**HE Active part of Perspective is either *Ichnographical*, *Orthographical*, or *Scenographical*.

**II.** *Ichnographia*, is the description of the plain, base or bottom of any body or building.

**III.** And it is twofold, to wit, either *Geometrical* or *Scenographical*.

**IV.** *Ichnographia Geometrical*, is that which gives the sight of the bottom or base of any body or building.

*So a Circle is the base of a Column; and a square is the base of a Pedestal; and the like; but this Geometrical Ichnography is not seen in Section, or through a Glass, unless it lies parallel to the base; and so it makes no Section with it.*

**V.** *Ichnographia Scenographical* is the Appearance of the same base in Section, or through a Glass, erected upright on the same plain, on which the base stands.

*And by this the said base is extended in length but contracted in breadth, for so it appears to the Eye.*

**VI.** *Orthographia*, is the Vision of the foreright side of any plain; to wit, of that plain or superficies which lies Equidistant to a right line, passing through the outward or convex centers of both Eyes, continued to a due length.

*And therefore Perspective Orthographia, is the delineation of the apparent right plain.*

*Scenographia* is the description of a plain or other figure,

figure, that declines from the apparent or foreright plain; that is, of that plain which makes Angles with the said foreright plain.

*The Scenographick vision of any form, body, or building is, of that side which declines from, or constitutes an Angle, with the right line, passing from the convex centers of both Eyes aforesaid: this Artists call the return of the foreright side. Now the difference between the Orthographick and Scenographick vision is this; the Orthographick shews the side of a body or building as it is beheld when the plain of the Glass is placed equidistant to that side: but the Scenographick shews the side of a body or edifice as it appears through a glass raised obliquely to the said side, or making an angle therewith.*

## CHAP. XXVII.

### *Of the Subject to be seen.*

**I.** **T**He Base of any thing, is the plain, flat, or floor upon which any solid body, or object is placed, or raised.

**II.** The *Altitude* or *height* is the perpendicular space of place, between the base and Eye, or height of the visual point above the base.

**III.** The *Visual point*, is a point in the Horizontal line, wherein all the beams of the Eyes unite.

*Exempli gratiâ.* If you look on a long straight river, the sides of which run parallel, yet by reason of the distance both sides of the river (although it be very broad) will seem to incline, touch, and unite with each other in one common point or center: and so if you look on a long straight brick-wall, the several lays of brick, and courses of mortar, will (at a great distance) seem to incline  
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each to other in one common point or center; this point reflected on a glass, raised upright on the base, is called the visual point.

IV. The Horizontal line is a line proceeding from the center of the Eye to the visual point, parallel to the Horizon of the Earth.

And this is, in men of ordinary height or stature, commonly about five foot from the ground or base.

V. The Distance is the space on the base, between the Glass and point in the base which lies directly under the Eyes.

VI. The Section is a plain of transparent or pellucid matter (as of Glass) raised upright on the plain of the base standing before you, parallel to a straight line, passing through the convex centers of both Eyes.

Without the knowledge of this Section or Glass, it is utterly impossible to understand perspective, or know what it means: Or be able to give a reason for the difference between the Orthographick and Scenographick figure.

VII. If the Glass is placed near the visual point, and far from the object, the figure which is seen will be very small: and the reason is, because all rays comprehending the Orthographical and Scenographical figures (though more remote from the object) fall into the visual point, as their common center.

VIII. If the Visual point be more elevated (though at the same distance) the Scenographick figure or form, will appear of a much larger magnitude: because the Visual radiations being higher, the various perpendiculars raised on the Section or Glass, cut them in wider distances, because more remote from the Glass.

IX. If the Glass incline to the Visual point, the Scenographick vision will be long-wise between the visual point and the object.

And

*And the reason is, because the plain of the Glass heaps in more of the Visual Radiations.*

X. If the Glass recline from the Visual point, the Scenographick figure will appear rounder, and begin to resemble the Orthographick

XI. But if the Glass is fixed Equidistant to the base, or plain the object stands upon; the Scenographick and Orthographick resemblance will be one and the same.

*And the reason is, because the form of the figure is lost, or not visible in the Section.*

XII. The *Visual Raies*, are those lines which proceed from the Visual point, through the Glass, to any point higher or lower than the plain of the Horizon.

XIII, *Diagonals* or lines of distance, are such as are drawn from the point of distance to any other point, higher or lower than the Horizon.

XIV. The *Object* is that form, figure, body or edifice intended to be expressed in *Perspective* proportions.

## CHAP. XXVIII.

### *The General Practice of Perspective.*

**I.** Let every line which in the Object or Geometrical figure is straight, perpendicular, or parallel to its base, be so also in its Scenographick delineation.

II. Let the lines which in the object return at right Angles from the fore-right-side, be drawn Scenographically from the Visual point.

III. Let

III. Let all straight lines, which in the object return from the fore-right side, run in a Scenographick figure into the Horizontal line.

IV. Let the object you intend to delineate standing on your right hand, be placed also on the right hand of the Visual point: and that on the left hand, on the left hand of the same point: and that which is just before, in the middle of it.

V. Let those lines which are (in the object) Equidistant to the returning line, be drawn in the Scenographick figure, from that point found in the Horizon.

VI. In setting off the altitude of Columns, Pedestals and the like, measure the heighth from the base line upwards in the front or fore-right side; and a visual ray drawn, that point in the front shall limit the altitude of the Column or pillar, all the way behind the fore-right side or Orthographick appearance, even to the visual point.

*This rule you must observe in all figures, aswel where there is a front or fore-right side, as where there is none.*

VII. In delineating Ovals, Circles, Arches, Crosses, Spirals and Cross-arches, or any other figure, in the roof of any room; first draw Ichnographically, and so with perpendiculars, from the most Eminent points thereof, carry it up unto the Ceiling, from which several points carry on the figure.

VIII. The center in any Scenographick regular figure is found by drawing cross-lines from opposite angles: for the point where the Diagonals cross is the Center.

IX. A ground plain of squares is alike, both above and below the Horizontal line; only the more it is distant above or beneath the Horizon, the squares will

will be so much the larger or wider.

X. In drawing a perspective figure, where many lines come together, you may for the directing of your eye, draw the Diagonals in Red; the Visual lines in black; the Perpendiculars in Green, or other different colour from that which you intend the figure shall be of.

XI. Having considered the height, distance and position of the figure, and drawn it accordingly, with side or angle against the base; raise perpendiculars from the several angles or designed points in the figure, to the base, and transfer the length of each perpendicular, from the place where it touches the base, to the base on the side opposite to the point of distance; so will the diametrals drawn to the perpendiculars in the base, by intersection with the Diagonals drawn to the several transferred distances, give the Angles of the figure: and so lines drawn from point to point will circumscribe the Scenographick figure.

XII. If in Landskip there be any standing waters, as rivers, ponds, and the like; place the horizontal line level with the farthest sight or appearance of it.

XIII. If there be any houses or the like in the picture, consider their position, that you may find from what point in the Horizontal line to draw the fronts and sides thereof.

XIV. In describing things at a great distance, observe the proportion (both in magnitude and distance) in draught, which appears from the object to the eye.

XV. In colouring and shadowing of every thing; you must do the same in your picture which you observe with your Eye, especially in objects lying near; but



*Of the general practice of Perspective.* 67

but according as the distance grows greater and greater, so the Colours must be fainter and fainter, till at last they lose themselves in a darkish sky colour.

XVI. The *Catoptricks* are best seen in a common looking glass or other polish'd matter, where if the glass be exactly flat, the object is exactly like its original: but if the glass be not flat, the resemblance alters from the original, and that more or less, according as the glass differs from an exact plain.

XVII. In drawing *Catoptrick* figures, the surface of the Glass is to be considered, upon which you mean to have the reflection, for which you must make a particular *Ichnographical* draught or projection; which on the glass must appear to be a plain full of squares; on which projection transfer what shall be drawn, on a plain divided into the same number of like squares: where though the draught may appear very confused, yet the reflection thereof on the Glass, will be very regular, proportional and really composed.

XVIII. The *Dioptrick* or broken beam may be seen in a tub; through a Crystal, or Glass, which hath its surface cut into many others, whereby the raies of the object are broken.

*For, to the flat of the Crystal or water, the raies run straight; but then they break and make an Angle; the which also by the refracted beams is made and continued on the other side of the same flat.*

XIX. When these faces on a Crystal are turned towards a plain, placed directly before it, they separate themselves at a good distance on the plain; because they are all directed to various far distant places of the same.

XX. But for the assigning to each of them a place on the same plain, no Geometrick rule is yet invented.

## C H A P. XXIX.

*A Rational Demonstration of Chiromantical Signatures ; Added by way of Appendix to Chap. V. of this Book.*

I. **T**He foundation of Chiromancie depends upon the true appropriation of the several mounts, fingers, or places in the hand, to their proper stars or Planets.

II. The Ancients have assigned the root of the middle finger to *Saturn* ; of the forefinger to *Jupiter* : the hollow of the hand to *Mars* : the root of the ring-finger to *Sol* : of the thumb to *Venus* : of the little finger to *Mercury* : and lastly, the brawn of the hand near the wrist to *Luna*.

III. That line which comes round the ball of the thumb towards the root or mount of *Jupiter* is called *Linea Jovialis*, or the life-line : that from the wrist to the root or mount of *Saturn*, *Linea Saturnialis* : but if it points to the root or mount of *Sol*, *Linea Solaris* : if to *Mercury*, *Linea Mercurealis* : that which goes from *Linea Jovialis* to the mount of *Luna*, *Linea Lunar*, or the natural line : the other great line above it is called *Linea Stellata*, or the line of fortune, because it limits the mounts of the planets, and is impressed with various vertues in those places according to the nature of the planet whose mount it runs under or sets a boundary unto : Lastly, the space between the natural line and the line of fortune is called *mensa*, the Table.

IV. All other lines shall either proceed out of the sides of the former, or else from some proper mount.

V. Every line great or small, long or short, hath a certain

certain beginning or root, from which it rises; and a certain end or point to which it tends.

VI. The distance between both ends, is the way of its passage; in which way, it either crosses some other line, or else is crossed: if it do neither, its signification is continual, and ought so much the more to be taken notice of.

VII. Every mount hath a proper signification, which it receives from the significations of its proper Planet, being abstractly considered: the same understand of all the principal lines aforesaid.

VIII. *Saturn* is the Author of Age, Inheritances, Melancholly, Malice, Sorrow, Misery, Calamities, Enemies, Imprisonment, Sicknes, Diseases, Perplexities, Cares, Poverty, Crosses, Death, and whatsoever evil can befall humane life: he signifies Fathers, Old Men, Labourers, Dyers, Smiths and Jesuits.

IX. *Jupiter* is the Author of Health, Strength, Moderation, Sobriety, Mercy, Riches, Substance, Goodness, Liberty, Religion, Honesty, Justice, Modesty, and all other things which may make a man happy; he signifies Churches, Church-men, Lawyers, Scholars, Cloathiers, and the like.

X. *Mars* is the Author of Strife, Contention, Pride, Presumption, Tyranny, Thefts, Murders, Victory, Conquest, Infortunacy, Boldness, and Dangers; he signifies Physicians, Chirurgians, Apothecaries, the Camp, all Military men and Preferments, Edge-tools, Butchers, Carpenters, Gunners, Bailiffs and the like.

XI. *Sol* is the Author of Honour, Glory, Renown, Preferment, Life, Generosity, Magnanimity, Sovereignty, Dominion, Power, Treasures, Gold, Silver, and whatsoever may make the life of man splendid; he signifies Kings, Princes, Rulers, and all men in power, Minters, Goldsmiths, long Life and Wisdom.

XII. *Venus* is the Author of Joy, Pleasure Mirth, Solace, Lust, Uncleanness and Idleness: she signifies Women-kind, Sisters, Ladies, Whores, Curiosities, Lapidaries, Silkmen, Taylors, Mercers, Upholsters, Pictures, Picture-drawers, the Pox, and diseases proceeding from uncleanness.

XIII. *Mercury* is the Author of Craft, Subtilty, Policy, Deceit, Perjury, Study, Hearing, and Merchandizing: he signifies Merchants, Clerks, Scholars, Secretaries, Ambassadors, Pages, Messengers, Poets, Orators, Stationers, Cheaters, Thieves, Petty-lawyers, Philosophers, Mathematicians, Astrologers.

XIV. *Luna* is the Author of popular Fame both Good and Evil, Joy and Sorrow, Mutability and Inconstancy; Affection and Disaffection; Moisture and every affect which may be said to be common: she signifies Waters, Ships, Seamen of all sorts, Queens, Ladies, a Governesse, the Common people in general, Neighbours, Mothers, Kindred, Fishmongers, Vintners, Tapsters, Midwives, Nurses and Travellers.

*This being known, understand,*

XV. *First*, That the lines take their signification from the mount of that planet from whence they rise.

XVI. *Secondly*, That the place from whence any line rises shews the ground, cause, or original of the things signified by that line: the line or mount to which it points, shews the issue, to what the thing tends, and what may be the end of the matter signified.

XVII. *Thirdly*, That whether the line signifies good or evil, if it be cut or crossed by any other line, that line so cutting it, will at a certain time not only abate the good, but also take away the evil, if it so signified.

XVIII. *Fourthly*, That the nature and quality of that line thus destroying the signification of the former, is known by considering from what place it rises, and to what place it tends.

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**XIX.** *Fifthly*, That a double judgment arises from every line, by accounting its rise, first from the one end; secondly, from the other.

**XX.** *Sixthly*, That little lines rising out of the sides of any other line, both augment the things signified by that line; and also signifie new matter arising by things signified by the line from whence they rise; and the place to which they point, shew to what they tend.

**XXI.** *Seventhly*, That the mounts or lines adorned with stars, or small lines, not crossed, or pointing to evil places, shew great good and happiness to the person, by things signified by the same mount or line: and on the contrary, vitiated with crosses, spots, or knots, shew much evil and perplexity.

**XXII.** *Lastly*, the beginning of the lines, shews in the beginning or forepart of Life; the middle, in the middle part of Life; and the ends of them, the latter-part, or end of Life; so that if any evil or good be signified by any line, you must hint the time according to the aforesaid reason.

*'Tis true, here we ought to enquire into the denominated times when the things signified should come to pass; but because that matter is something long and abstruse (being more fit to be handled in a particular tract, wherein all its curiosities may be examined) this our present work being a subject of another nature, and these things not essential to our purpose, but only added by way of appendix, we shall at this time forbear. Notwithstanding, although we have not here delineated every thing in particular, yet we have laid (as it were) the ground and foundation of the Art; out of which, as out of a fountain, the industrious student may at his own leisure and pleasure, rear a stately fabrick.*



# POLYGRAPHICES

## LIBER SECUNDUS.

### Of ENGRAVING, ETCHING, and LIMNING.

Shewing the Instruments belonging to the Work ; the Matter of the Work, the way and manner of performing the same ; together with all other Requisites and Ornaments.

#### CHAP. I.

##### *Of Graving, and the Instruments thereof.*

**I.** **G** *Raving* is an Art which teacheth how to transfer any design upon Copper, Brass, or Wood, by help of sharp pointed and cutting Instruments.

II. The chief Instruments are four, I. Gravers, 2. An Oyl stone, 3. A Cushion, 4. A Burnisher.

III. Gravers are of three sorts, round pointed, square pointed, and Lozenge pointed. *The round is best to scratch withal : the square Graver is to make the largest strokes :*

*stroaks: the Lozenge is to make stroaks more fine and delicate; but a Graver of a middle size betwixt the square and Lozenge pointed, will make the stroaks or batches show with more life and vigour, according as you manage it in working.*

IV. The Oyl-stone is to whet the Gravers upon, which must be very smooth, not too soft, nor too hard, and without pinholes.

The use is this: put a few drops of oyl Olive upon the stone, and laying that side of it, which you intend shall cut the Copper, flat upon the stone, whet it very flat and even; and therefore be sure to carry your hand stedfast with an equal strength, placing the forefinger firmly, upon the opposite side of the graver. Then turn the next side of your graver, and whet that in like manner, that you may have a very sharp edge for an Inch or more. Lastly, turning uppermost that edge which you have so whetted, and setting the end of the graver obliquely upon the stone, whet it very flat and sloping in form of a Lozenge (with an exact and even band) making to the edge thereof a sharp point. It is impossible that the work should be with the neatness and curiöfity desired, if the graver be not, not only very good, but also exactly and carefully whetted.

V. The Cushion is a leather bag filled with fine sand, to lay the plate upon, on which you may turn it every way at ease.

You must turn your plate with your left hand, according as the stroaks which you grave do turn, which must be attained with diligent care and practice.

VI. The burnishing Iron is of use to rub out scratches and specks or other things which may fault your work in the plate; as also if any stroaks be graved too deep or gross to make them appear less and fainter by rubbing them therewith.

VII. To

## VII. To make your Gravers.

*Provide some Cross-bow steele, and cause it to be beaten out into small rods, and softened, then with a good file you may shape them at pleasure: when you have done, heat them red-hot, and straight dip it into Soap, and by so doing it will be very hard: where note, that in dipping them into the Soap, if you turn your hand never so little awry, the graver will be crooked. If your graver be too hard, take a red-hot Charcoal and lay the end of your graver upon it till it begins to wax yellowish, and then dip it into tallow (some say water) and it will be tougher.*

VIII. Have by you a piece of box or hard wood, that after you have sharpened your graver, by striking the point of it into the said box or hard wood, you may take off all the roughness about the points, which was caused by whetting it upon the oyl-stone.

IX. Lastly, take a file and touch the edge of the graver therewith; if the file cut it, it is too soft, and will do no good: but if it will not touch it, it is fit for your work.

*If it should break on the point, it is a sign it is tempered too hard; which oftentimes after a little use by whetting will come into a good condition.*

## C H A P. II.

*Of Polishing the Copper Plates.*

I. **T**AKE a plate of Brass or Copper of what bigness you please, and of a reasonable thickness, taking heed that it be free from fire flaws.

II. Beat it as smooth as you can with a hammer, and then rub it as smooth as you can, with a pumice stone

void



void of Gravel (lest it scratch it and so cause as much labour to get them out) and a little water.

III. Then drop a few drops of oyl Olive upon the plate, and burnish it with your burnishing Iron; and then rub it with Charcoal made of Beech wood quenched in Urine.

IV. Lastly, with a roul made of a piece of a black felt, castor, or Beaver, dip'd in oyl Olive, rub it well for an hour, so shall your plate be exactly polished.

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C H A P. III.

*Of Holding the Graver.*

I. **I**T will be necessary to cut off that part of the knob of the handle of the graver which is upon the same line with the edge of the graver; thereby making that lower side next to the plate flat, that it may be no hinderance in graving.

*For working upon a large plate, that part of the handle (if not cut away) will so rest upon the Copper, that it will hinder the smooth and even carriage of your hand in making your strokes, and will cause your graver to run into your Copper deeper than it should do. This done,*

II. Place the knob at the end of the handle of the Graver in the hollow of your hand, and having extended your forefinger towards the point of the Graver, laying it a top, or opposite to the edge which should cut the plate, place your thumb on the one side of the Graver, and your other fingers on the other side, so as that you may guide the graver flat and parallel with the plate.

III. Be wary that your fingers interpose not between the

the plate and the Graver, for they will hinder you in carrying your graver level with the plate, and cause your lines to be more deep, gross and rugged, than otherwise they would be.

#### CHAP. IV.

##### *Of the way and manner of Engraving.*

**I.** Having a Cushion filled with sand about nine inches long and six broad, and three or four thick, and a plate well polished; lay the plate upon the Cushion, which place upon a firm Table.

**II.** Holding the Graver (as aforesaid) according to art, in making straight stroaks be sure to hold your plate firm upon the Cushion, moving your hand, leaning lightly where the stroak should be fine; and harder where you would have the stroak broader.

**III.** But in making circular or crooked stroaks, hold your hand and Graver stedfast, your arm and elbow resting upon the table, and move the plate against the Graver; for otherwise it is impossible to make those crooked or winding stroaks with that neatness and command that you ought to do.

**IV.** Learn to carry your hand with such a slight, that you may end your stroak as finely as you began it; and if you have occasion to make one part deeper or blacker than another, do it by degrees; and that you may do it the more exactly, observe that your stroaks be not too close, nor too wide.

For your more exact observation, practise by such prints which are more loosely shadowed, lest by imitating the more dark, you should not know where to begin or end.

V. After

*Of the Imitation of Copies or Prints.* 77

V. After you have graved part of your work, it will be needful to scrape it with the sharp edge of a burnisher or other graver, carrying it along eaven with the plate, to take off the roughness of the stroaks; but in doing it beware of making scratches.

VI. And that you may the better see that which is engraven, with the piece of Felt or Castor (at the fourth Section of the second Chapter) dipt in oyl rub the places graven.

VII. Lastly, whatsoever appears to be amiss, you may rub out with the burnisher, and very exactly polish it with your piece of Felt or Castor and oyl; which done, to cleanse the plate you may boil it a little in wine vinegar, and rub it gently with a brush of small brasse wire or hogs bristles.

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C H A P. V.

*Of the Imitation of Copies or Prints.*

I. **H**AVING a piece of Bees wax tyed up in a fine holland rag, heat the plate over the fire, till it may be hot enough to melt the wax; then rub the plate with the wax tied up in the rag, till you see it covered all over with wax, (which let be very thin:) if it be not eaven, heat it again by the fire, and wipe it over gently with a feather.

II. If you would copy a printed picture, to have it print off the same way; then clap the print which you would imitate with the printed side next to the plate; and having placed it very exactly, rub the back-side of the print with a burnisher, or any thing that is hard, smooth and round, which will cause it to

to stick to the wax upon the plate : then take off the print (beginning at one corner) gently and with care, lest you tear it (which may be caused also by putting too much wax upon the plate) and it will leave upon the wax the perfect proportion in every part.

*Where note, if it be an old picture, before you place it upon the wax, it will be good to track it over in every limb with a black-lead pensil.*

III. But if you would have it print the contrary way, take the dust of black-lead, and rub the backside of the print all over therewith, which black side put upon the waxed plate; and with your needle or drawing point, draw all the out-lines of the design or print, all which you will find upon the wax. This done,

IV. Take a long graver either Lozenge or round (which is better) very sharp, and with the point thereof scratch over every particular limb in the outstrokes; which done, it will not be difficult to mark out all the shadows as you engrave, having the proportion before you.

V. Lastly, for Coppies or Letters, go over every letter with black-lead, or write them with ungumm'd Ink, and clap the paper over the waxed plate as before.

## CHAP. VI.

### *Of Engraving in Wood.*

**T**He figures that are to be carved or graven in wood must first be drawn, traced, or pasted upon the wood; and afterwards all the other standing of the wood (except the figure) must be cut away with



with little narrow pointed knives made for that purpose.

*This graving in wood is far more tedious and difficult than that in Brass or Copper; because you must cut twice or thrice to take out one stroke; and having cut it, to be careful in picking it out, lest you should break any part of the work, which would deface it.*

II. For the kind of the wood let it be hard and tough: the best for this purpose is Beech and Box: let it be plained inch thick, which you may have cut into pieces according to the bigness of the figure you engrave.

III. To draw the figures upon the wood.

*Grinde white Lead very fine, and temper it with fair water; dip a cloth therein, and rub over one side of the wood, and let it dry thoroughly: This keepeth the Ink (if you draw therewith) that it run not about, nor sink: and if you draw with Pastils, it makes the strokes appear more plain and bright.*

IV. Having whited the wood as before (if it is a figure you would copy) black or red the blankside of the print or copy, and with a little stick or swallows quill, trace or draw over the strokes of the figure.

V. But if you paste the figure upon the wood, you must not then white it over (for then the figure will pill off) but only see the wood be well plained: then wipe over the printed side of the figure with Gum Tragacanth dissolved in fair water, and clap it smooth upon the wood, which let dry thoroughly: then wet it a little all over, and fret off the paper gently, till you can see perfectly every stroke of the figure: dry it again, and fall to cutting or carving it.

## C H A P. VII.

*Of Etching, and the Materials thereof.*

I. **E**tching is an artificial Engraving of Brass or Copper plates with *Aqua fortis*.

II. The Instruments of Etching (besides the plate) are these nine. 1. *Hard Varnish*. 2. *Soft Varnish*. 3. Prepared Oyl. 4. *Aqua fortis*. 5. Needles. 6. Oyl-stone. 7. *Brush-pensil*. 8. *Burnisher*. 9. The Frame and Trough.

III. *To polish the Plate.*

Although in chap. 2. of this Book, we have sufficiently taught how to polish the Plate, yet nevertheless we think it convenient to subjoyn these following words. First, the Plate being well planished or forged, chose the smoothest side to polish; then fix it upon a board a little declining, and rub it firmly and evenly all over with a piece of Grindstone, throwing water often on it, so long till there be no dints, flaws or marks of the hammer: wash it clean, and with a piece of good Pumice stone, rub it so long till there be no rough stroaks or marks of the Grindstone: wash it clean again, and rub it with a fine Hoan and water, till the marks of the pumice stone are rubbed out: wash it again, and with a piece of Charcoal without knots (being heat red hot and quenched in water, the outside being pared off) rub the plate with water till all the small stroaks of the Hoan be vanished; lastly, if yet there remain any small stroaks or scratches, rub them out with the end of the burnishing Iron, so shall the Plate be fitted for work.

IV. *To make the hard Varnish for Etching.*

Take Greek or Burgundy Pitch, Colophonium or Rosin,

# Of Etching and the Materials thereof. 81

ozin, of each five ounces, Nut-oyl four ounces; melt the Pitch and Rozin in an earthen pot upon a gentle fire; then put in the Oyl, and let them boil for the space of half an hour: Cool it a little upon a softer fire till it appear like a Glewy syrrup: cool it a little more, strain it, and being almost cold, put it into a glass bottle for use. Being thus made it will keep at least twenty years.

## V. To make the soft Varnish for Etching.

Take Virgin-wax three ounces, Mastich in drops two ounces, Asphaltum one ounce: grind the Mastich and Asphaltum severally very fine; then in an Earthen pot melt the Wax, and strew in the Mastich and Asphaltum, stirring all upon the fire till they be well dissolved and mixed, which will be in about half a quarter of an hour; then cooling it a little, pouring it into a basin of fair water (all except the dregs) and with your hands wet (before it is cold) form it into moulds.

## VI. To make the prepared Oyl.

Take Oyl Olive, make it hot in an Earthen pot; and put into it a sufficient quantity of tried sheeps suet (so much as being dropped upon a cold thing, the oyl may be a little hardened and firm) boil them together for an hour, till they be of a reddish colour, lest they should separate when you use them. This mixture is to make the fat more liquid, and not cool so fast, for the fat alone would be no sooner on the pencil, but it would grow cold; and be sure to put in more oyl in Winter than in Summer.

## VII. To make the Aqua fortis.

Take distilled White-wine Vinegar three pints; Sal Armoniack, Bay-salt, of each six ounces; Vertegriese four ounces. Put all together into a large well glazed earthen pot (that they may not boil over) cover the pot

pot close, and put it on a quick fire, and let it speedily boil two or three great walms and no more; when it is ready to boil, uncover the pot, and stir it sometimes with a stick, taking heed that it boil not over: having boiled, take it from the fire, and let it cool being close covered, and when it is cold, put it into a glass bottle with a glass stopple: If it be too strong in Etching, weaken it with a glass or two of the same Vinegar you made it of. There is another sort of Aqua fortis, which is called Common, which is exhibited in *Synopsis Medicinæ, lib. 3. cap. 7. sect. 4. pag. 656*. But because that Book may not be in every mans hand, we will here insert it; it is thus: Take dried Vitriol two pound, Salt-peter one pound; mix them and distil by a Retort, in open fire by degrees.

VIII. *To make the Etching Needles.*

Chose Needles of several sizes, such as will break without bending, and of a fine grain; then take good round sticks of firm wood (not apt to split) about six inches long, and as thick as a large Goose quill, at the ends of which fix your Needles, so that they may stand out of the sticks about a quarter of an inch or something more.

IX. *To whet the points of the Needles with the Oyl stone.*

If you would have them whetted round, you must whet their points short upon the oyl stone, (not as sowing Needles are) turning them round whilst you whet them, as Turners do. If you whet them sloping, first make them blunt upon the oyl stone, then holding them firm and steady, whet them sloping upon one side only, till they come to a short and roundish oval.

X. The Brush pencil is to cleanse the work, wipe off dust, and to strike the Colours even over the ground or varnish, when laid upon the Plate.

XI. The burnisher is a well hardened piece of steel somewhat



*Of the manner of using the hard Varnish.* 83

somewhat roundish at the end. Its uses are what we have spoken at the sixth Section of the first Chapter, and the third Section of the second Chapter.

*XII. To make the Frame and Trough.*

The Frame is an entire board, about whose top sides is fastned a ledge two Inches broad, to keep the *Aqua fortis* from running off from the sides when you pour it on: the lower end of this board must be placed in the Trough, leaning sloping against a wall or some other thing, wherein you must fix several pegs of wood to rest the plate upon. The Trough is made of a firm piece of Elm or Oak set upon four legs, whose hollow is four Inches wide; and so long as may best serve your use: the hollow must be something deeper in the middle, that the water running thither may fall through a hole (there made for that purpose) into an earthen pan well leaded. The inside of this board and trough must be covered over with a thick oyl colour, to binder the *Aqua fortis* from eating or rotting the board.

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C H A P. VIII.

*The way and manner of using the hard Varnish.*

**H**AVING well heat the polished Plate over a chafin-dish of coals, take some of the first varnish with a little stick, and put a drop of it on the top of your finger, with which lightly touch the Plate at equal distances, laying on the varnish equally, and heating the plate again as it grows cold, keeping it carefully from dust or filth; then with the ball of your thumb tap it upon the plate; still wiping your hand over all, to make it more smooth and equal.

*And here beware that neither the varnish be too thick, nor on the plate, nor your hand sweaty.*

II. Then take a great lighted candle burning clear with a short snuff, (placing the corner of the plate against a wall) hold the varnished side downward over the candle, as close as you can, so it touch not the Varnish, guiding the flame all over, till it is all perfectly black; which you must keep from dust or filth till it is dry.

III. Over a fire of Charcoals hang the varnished plate to dry with the varnish upwards, which will smoak; when the smoak abates, take away the plate, and with a pointed stick scratch near the side thereof, and if the varnish easily comes off, hang it over the fire again a little, so long till the Varnish will not too easily come off; then take it from the fire and let it cool.

*If the varnish should be too hard, cast cold water on the back-side of the plate to cool it, that the heat may not make it too hard and brittle. This done,*

IV. Place it upon a low desk, or some such like thing, and cover that part which you do not work on, with a sheet of fine white paper, and over that a sheet of brown paper, on which may rest your hand, to keep it from the varnish.

V. If you use a ruler, lay some part of it upon the paper, that it may not rub off the varnish; and have an especial care, that no dust or filth get in between the paper and the varnish, for that will hurt it.

C H A P. IX.

*The way and manner of Etching.*

**I**N making lines or hatches, some bigger, some lesser, straight or crooked, you must use several sorts of needles, bigger or lesser as the work requires.

II. The great lines are made by leaning hard on the needle; its point being short and thick, (but a round point will not cut the varnish clear:) or, by making divers lines or hatches, one very close to another, and then by passing over them again with a thicker needle; or, by making them with an indifferent large needle, and letting the *Aqua fortis* lie the longer thereon.

*The best needles for this work are such as are whet sloping with an oval, because their sides will cut that which the round ones will not.*

III. If your lines or hatches ought to be of an equal thickness from end to end, lean on the needle with an equal force; leaning lightly where you would have the lines or strokes fine or small; and more heavy where you would have the line appear deep or large; whereby the needle may have some Impression in the Copper.

IV. If your lines or hatches be too small, pass over them again with a short round point, of such a bigness as you would have the line of, leaning strongly where you would have the line deep.

V. The manner of holding the needle with Oval points (which are most proper to make large and deep strokes) is much like that of a pen, only the flat side whetted is usually held towards the thumb: but they may be used with the face of the Oval turned toward the middle finger.

VI. If you would end with a fine stroak, you ought to do that with a very fine needle.

VII. In using the Oval points, hold them as upright and straight in your hand as you can, striking your stroaks firmly and freely, for that will add much to their beauty and clearness.

VIII. In Landskips, in places farthest from the light, as also nearest the light, use a very slender point, leaning so lightly with your hand as to make a small faint stroak.

IX. In working be careful to brush off all the dust which you work off with the needles.

## C H A P X.

### *Of using the Aqua fortis.*

I. IF there be any stroaks which you would not have the *Aqua fortis* eat into; or any places where the varnish is rubbed off, melt some prepared Oyl, and with a pencil, cover those places pretty thick.

II. Then take a brush, pencil, or rag, and dip it in the prepared oyl, and rub the back side of the plate all over, that the *Aqua fortis* may not hurt it, if by chance any should fall thereon.

III. Before you put the *Aqua fortis* to the plate, gently warm or dry the plate by a fire to dry up the humidity, which it might contract by reason of the Air; and to prevent the breaking up the Varnish upon the first pouring the *Aqua fortis* thereon.

IV. Place the plate by the 12th. Section of the 7th. Chapter of this book, and with the *Aqua fortis* in an Earthen pot pour upon the plate, beginning at the top



moving your hand that it may run all over the plate, which do for eight or ten times: then turn it corner-wise, and pour the *Aqua fortis* on it that way ten or twelve times; and then turn it again corner-wise the other way, pouring on the *Aqua fortis* eight or ten times before; doing thus several times for the space of half a quarter of an hour or more, according to the strength of the water, and nature of the Copper.

Further must be less time allowed to hard and brittle Copper for pouring on the *Aqua fortis*, but more to the soft.

V. But you must have special regard to cast on the *Aqua fortis* as occasion shall require, and work is; casting it on at several times, and on several places; where you would have it very deep, often; where less deep fewer times: where light, less yet; where lighter, lesser yet: and where so light as it can scarcely be seen, once or twice: wash it with water, and cover it where you would have it lighter.

VI. Having thus covered your plates as occasion requires; for the second time, place the plate on the frame as aforesaid, and pour on it your *Aqua fortis* for a full half hour.

VII. Then wash it with water and dry it, covering the places which require lightness or faintness (that they may be proportionable to the design) then pour on the *Aqua fortis* for the last time more or less according to the nature of your work, and the deepness that it requires.

VIII. You may rub off the varnish or ground, as occasion in your work requires with a Charcoal, to see whether the water hath eaten deep enough; by which you may judge of the space of time, that you are after to employ in pouring on the *Aqua fortis*, in the works you will have to do, which if the shadows require

require much depth, or ought to be very black, the water ought to be poured on (at the least time) for an hour or better; yet know no certain rule of time can be limited for this.

## CHAP. XI.

### *Of Finishing the Work.*

I. **A**LL the former operations being done, wash the Plate with fair water; and put it wet upon the fire, till the mixture be well melted, and then wipe it very clean on both sides with a linnen cloth, till you have cleansed it of all the mixture.

II. Take Charcoal of Willow, take off the rind of it, and putting fair water on the plate, rub it with the Charcoal, as if you were to polish it, and it will take off the varnish.

Where note, that the Coal must be free from all knots and roughness, and that no sand or filth fall upon the plate.

III. Take ordinary *Aqua fortis*, to which add two third parts of water, and with some linnen rags dipped therein, rub the Plate all over, so will you take away its discolouring, and recover its former beauty.

IV. Then take dry linnen rags, and wipe the plate so as to take off all the aforesaid water, and then holding it a little to the fire, put upon it a little oyl olive, and with a piece of an old Beaver rolled up rub the plate well all over, and lastly wipe it well with a dry cloth.

V. Then if any places need touching with the Grayer, as sometimes it happens, especially where it

is to be very deep or black, perfect them with care; which done, the plate is ready for the Rolling Press.

CHAP. XII.

*The way of using the soft Varnish.*

**T**HE Plate being prepared by cleansing it with a Charcoal and clean water, wash it well and dry it, then with fine white Chalk scraped and a fine rag, rub it well over, not touching it with your fingers.

II. Lay down your plate over a Chafing-dish of small coal, yet so as the fire may have air; then take the Ground or soft Varnish (it being tyed up in a fine rag) and rub it up and down the Copper, so as it may sufficiently cover it, (not too thin nor too thick:) then take a feather and smooth it as well as possibly you can all one way, and then cross it, till it lie very well.

*But you must take heed that the Plate be not too hot, for if it lie till the Ground smoak, the moisture will be dried up, and that will spoil the work, and make the Ground break or fly up.*

III. Then grind some white Lead with Gum water, so that it may be of a convenient thickness to spread on the Copper; and with a large pencil, or small brush, strike the Plate cross over, twice or thrice till it is smooth; and then with a larger brush (made of Squirrels tails) gently smooth the white, and then let it lie till it is drie.

IV. Or

IV. Or you may black the Varnish with a candle, as we taught at the second Section of the eighth Chapter, and then warm it over the fire, till the varnish begin to melt.

### CH A P. XIII.

#### *The way of Etching upon the soft Varnish.*

THE way of Etching is the same with that in the hard Varnish; only you must be careful not to hurt your varnish, which you may do by placing on the sides of your plate two little boards, and laying cross over them another thin one, so as that it may not touch the plate, on which you must rest your hand whilst you work.

II. Then place the plate on a Desk (if you so please) for by that means the superfluous matter will fall away of it self.

III. But if you have any design to transfer upon the plate from any Copy or Print, scrape on the backside thereof some red Chalk all over; then go over that, by scraping some soft Charcoal, till it mingle with the Chalk; and with a large stiff pencil rub it all over till it be fine and even, and so lay down the design upon the plate: with a blunt Needle draw over the out stroaks: and as you work, you need not scratch hard into the Copper, only so as you may see the Needle go through the Varnish to the Copper.

IV. Always be sure when you leave the work, to wrap the Plate up in Paper, to keep it from hurt, and corrupting in the air, which may drie the varnish: and in Winter time wrap the Plate up in a piece of wollen, as well as paper; for if the frost get to it,



it, it will cause the Varnish to rise from the Cepper in the eating.

An inconveniency also will accrew, by letting the Varnish lie too long upon the Plate before the work is finished; for three or four moneths will consume the moisture and so spoil all.

V. The marking of the design upon the soft varnish, is best done with black Lead or Chalk, if the ground is white; but with red Chalk, if the ground is black.

VI. Having graved what you intend upon the varnish, take some fair water, a little warm, and cast it upon the plate; and then with a soft clean Sponge, rub upon the white Lead to moisten it all over; and then wash the plate to take away the whiting, and drie it.

VII. Or lastly, with *Aqua fortis* mixed with fair water, wash it all over, and by this means you may take away the whiting, which then wash with common water and drie it; and thus have you the plate prepared for the *Aqua fortis*.

#### C H A P. XIV.

*Of using the Aqua fortis, and finishing the work.*

I. **P**ut soft Wax (red or green) round the brims of the Plate, and let it be raised above the varnish about half a Barley corns length; so that placing the plate level, the water being poured upon the Plate may by this means be retained. This done,

II. Take common *Aqua fortis* six ounces, Common water two ounces; mix them, and pour it gently upon

upon the plate, so that it may cover it fully all over; so will the stronger hatchings be full of bubbles, while the fainter will appear clear for a while, not making any sudden operations to the view.

III. When you perceive the water to operate a small time, pour it off into a glazed earthen dish, and throw fair water upon the Plate, to wash away the *Aqua fortis*, then drie the plate: and where you would have the Cut to be faint, tender or sweet, cover it with the prepared Oil, and then cover the Plate again with *Aqua fortis* as before, leaving it on for eight or ten minutes, or longer: then put off the *Aqua fortis* as before, washing and drying the Plate, and covering with the prepared Oyl other places which you would not have so deep as the rest: Lastly, put on the *Aqua fortis* again, for the space of half an hour (more or less) and then pour it off, washing the plate with fair water as before.

*As you would have your lines or strokes to be deeper and deeper, so cover the sweeter or fainter parts by degrees with the prepared oyl, that the Aqua fortis may lie the longer on the deep strokes.* Then

IV. Take off the border of Wax, and heat the plate, so that the oyl and varnish may thoroughly melt; which wipe away well with a linnen cloth: then rub the plate over with oyl Olive and a piece of an old beaver roll'd up, which done, touch it with the Graver where need is.

V. But if any thing be (at last) forgotten; then rub the plate aforesaid with crums of bread, so well that no filth or oyl remain upon the Plate.

VI. Then heat the plate upon a Charcoal fire, and spread the soft varnish with a feather upon it (as before) so that the hatchings may be filled with varnish; black it, and then touch it over again, or add what you intend.

VII. Let

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Of Limning, and the Materials thereof. 93

VII. Let your hatchings be made by means of the Needles, according as the manner of the work shall require, being careful before you put on the *Aqua fortis*, to cover the first graving on the Plate with the prepared Oyl (lest the Varnish should not have covered all over : ) then cause the *Aqua fortis* to eat into the work ; and lastly cleanse the Plate as before.

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C H A P. XV.

Of Limning, and the Materials thereof.

I. **L**imning is an Art whereby in water Colours, we strive to resemble Nature in every thing to the life.

II. The Instruments and Materials thereof are chiefly these. 1. *Gums.* 2. *Colours.* 3. *Liquid Gold and Silver.* 4. *The Grindstone and Muller.* 5. *Pencils.* 6. *Tables to Limn in.* 7. *Little glass or China dishes.*

III. The *Gums* are chiefly these four, Gum Arabick, Gum Lake, Gum Hedera, Gum Armoniack.

IV. The principal *Colours* are these seven, *White, Black, Red, Green, Yellow, Blew, Brown* : out of which are made mixt or compound Colours.

V. The *Liquid Gold and Silver* is either natural or artificial.

The natural is that which is produced of the Metals themselves : the Artificial is that which is formed of other colours.

VI. The *Grinding stone, Muller, Pencils, Tables, and Shells, or little China dishes* are only the necessary instruments and attendants, which belong to the practice of Limning.

## CHAP. XVI.

*Of the Gumms and their Use.*

I. **T**He chief of all is *Gum-Arabick*, that which is white, clear and brittle; the Gum-water of it is made thus :

Take *Gum-Arabick*, bruise it and tie it up in a fine clean linnen cloath, and put it into a convenient quantity of pure spring-water, in a glass or earthen vessel; letting the Gum remain there till it is dissolved; which done, if the water is not stiff enough, put more Gum into the cloath; but if too stiff, add more water : of which Gum-water have two sorts by you, the one strong, the other weak; of which you may make a third at pleasure.

But if you be where *Gum-Arabick* is not to be got, you may instead of that use the preparation of sheeps leather or parchment following.

Take of the shreds of white sheep-skins (which are to be had plentifully at Glovers) or else of parchments, one pound; Conduit or running-water two quarts, boyl it to a thin gelly, then strain it whilst hot through a fine strainer, and so use it.

II. *Gum-lake*; it is made of whites of Eggs beaten and strained, a pint, Honey, *Gum-hedera* of each two Drachms, strong wort four spoonfuls, mix them, and strain them with a piece of sponge till they run like a clear oyl, which keep in a clean vessel till it grows hard.

This Gum will dissolve in water like *Gum-Arabick*, of which Gum-water is made in like manner; it is a good ordinary Varnish for Pictures.

III. *Gum-Hedera*, or Gum of Ivy; it is gotten out of Ivy, by cutting with an Axe a great branch thereof, climbing



limbing upon an Oak-tree, and bruising the ends of  
with the head of the Axe; at a Months end, or  
ereabouts, you may take from it a very clear, and pure  
Gum, like oyl.

It is good to put into gold size and other colours, for  
these three reasons: 1. It abates the ill scent of the size:

2. It will prevent bubbles in gold size and other colours:

Lastly, it takes the fat and clamminess off colours: be-  
sides which it is of use in making Pomanders.

IV. Gum Armaniacum, It is a Forrein Gum, and  
ought to be brought strained. Grind it very fine with  
Juice of Garlick and a little Gum-Arabick water, so that  
it may not be too thick, but that you may write with it  
what you will:

When you use it, draw what you will with it, and let it  
dry; and when you gild upon it, cut your Gold or Silver,  
in the fashion which you drew with the size or gum; then  
breath upon the size, and lay the Gold upon it gently taken  
up, which press down hard with a piece of wool; and then  
let it well dry; being dried, with a fine linnen cloath strike  
off the loose gold; so will what was drawn be fairly gilded  
as it was as fine as a hair: it is called Gold Armoniack.

## CHAP. XVII.

### Of the seven Colours in General.

I. **T**He chief Whites are these, Spodium, Ceruse,  
White-lead, Spanish-white, Egg-shells burnt.  
This Colour is called in Greek λευκός of λεύω, video,  
to see, because λευκοτής ὅτι διακερικτὸν ὄψεως, white-  
ness (as Aristotle said) is the object of sight, in Latine  
Albus; from whence the Alps had their name, by reason of  
their

their continual whiteness with Snow. The Spanish-white is thus made. Take fine Chalk three Ounces, Alom one Ounce, grind them together with fair water, till it be like pap; roul it up into balls, which dry leifurely: then put them into the fire till they are red hot; take them out, and let them cool: it is the best white of all, so garnish with, being ground with weak gum-water.

II. The chief Blacks are these, Hartshorn burnt, Ivory burnt, Cherry-stones burnt, Lamp-black, Charcoal.

Black, in Latine Niger is so called from the Greek word νεκρός, which signifies dead, because putrified and dead things are generally of that colour. Lamp-black is the smoak of a Link, Torch or Lamp gathered together.

III. The chief Reds are these; Vermilion, Red-lead, Indian-lake, Red-oker. It is called in Latin Ruber. Ῥυθὴν τὴν ἐκ τῶν ἀ corticibus vel granis mali punici; from the Rinds or Seeds of Pomegranates, as Scaliger saith.

IV. The chief Greens are these; Green Bice, Verd-griese, Verditure, Sapgreen. This colour is called in Latine Viridis from Vires: in Greek χλωρὸν à χλόν, Grasse or Green herb, which is of this Colour.

V. The chief Yellows are these; Orpiment, Malticot, Saffron, Pink yellow, Oker de luce. This colour is called in Latine Flavus, Luteus; in Greek ξανθός, which is Homer's Epithete for Menelaus, where he calls him ξανθὸς μενέλαος.

VI. The chief Blews are Ultramarine, Indico, Smalt, Blew bice. This colour is called in Latine Cæruleus, in Greek Κυάνειον à Κύαν, the name of a stone, which yields Ultramarine.

VII. The chiefest Browns are Umber, Spanish-brown, Colens Earth. It is called in Latine Fuscus, quasi φῶς σκιαῖται, from darkening the Light, in Greek φαιός.

CH AP.

CHAP. XVIII.

Of Colours in Particular.

**C**eruse, Grind it with glair of Eggs, and it will make a most perfect white.

II. *White-lead*, Grind it with a weak water of Gum-lake, and let it stand three or four days, after which you mix with it Roset and Vermilion, it makes a fair carnation.

III. *Spanish-white*, It is the best white of all, to furnish with, ground with weak Gum-water.

IV. *Lamp-black*, ground with Gum-water, it makes good black.

V. *Vermilion*, Grind it with the glair of an Egg, and the grinding put a little clarified honey, to make its colour bright and perfect.

VI. *Sinaper-lake*, it makes a deep and beautiful red, rather purple, almost like unto a Red-rose. Grind with Gum-lake and Turnsole water: if you will have it light, add a little Ceruse, and it will make it a bright Crimson; if to Diaper, add only Turnsole water.

VII. *Red-lead*, Grind it with some Saffron, and stiff Gum-lake; for the Saffron makes it orient, and of a Marigold colour.

VIII. *Turnsole*, Lay it in a Sawcer of Vinegar, and set it over a chafing-dish of coals; let it boil, then take it off, and wring it into a Shell, adding a little Gum-Arabick, let it stand till it is dissolved: It is good to shadow Carnation, and all Yellows.

IX. *Roset*, Grind it with Brazil-water, and it will make a deep purple; put Ceruse to it, and it will be lighter; grind it with Litmose, and it will make a fair Violet.

H

X. *Spanish*

X. *Spanish brown*, Grind it with Brazil-water: mingle it with Ceruse and it makes a horse-flesh Colour.

XI. *Bole Armoniack*, It is a faint Colour; its chief use is, in making size for burnish'd gold.

XII. *Green bice*, Order it as you do blew bice; when it is moyst, and not through dry, you may diaper upon it with the water of deep green.

XIII. *Verdegriese*, Grind it with juyce of Rue, and a little weak gum-water, and you will have a most pure green: if you will diaper with it, grind it with Lye of Rue (or else the decoction thereof) and there will be a hoary green: Diaper upon Verdegriese green with sap-green: also Verdegriese ground with white Tartar, and then tempered with gum-water, gives a most perfect green.

XIV. *Verditure*, grind it with a weak Gum-Arabick water: it is the faintest green that is, but is good to lay upon black, in any kind of drapery.

XV. *Sap-green*, lay it in sharp vinegar all night; put it into a little Alom to raise its colour, and you will have a good green to diaper upon other greens.

XVI. *Orpiment*, *Arsenicum* or *Auripigmentum*, grind it with a stiff water of Gum-lake, because it is the best colour of it self; it will lie upon no green, for all greens, white and red lead; and Ceruse stain it: wherefore you must deepen your colours so that the Orpiment may be highest, and so it may agree with all Colours.

XVII. *Mastice*, Grind it with a small quantity of Saffron in gum-water, and never make it lighter than it is: it will endure to lie upon all colours and metals.

XVIII. *Saffron*, Steep it in Glair: it may be ground with Vermilion.

XIX. *Pink-yellow*, If you would have it sad coloured, grind it with Saffron; if light, with Ceruse: mix it with weak gum-water, and so use it.

XX. *Oke*



XX. *Oker de Luce*, Grind it with pure Brazil-water : makes a passing hair colour ; and is a natural shadow of gold.

XXI. *Umber*, It is a more sad colour. Grind it with gum-water, or gum-lake ; and lighten it (if you please) with a little Ceruse and a blade of Saffron.

XXII. *Ultramarine*, If you would have it deep, grind with Litmose-water ; but if light, with fine Ceruse, and a weak Gum-Arabick water.

XXIII. *Indico*, Grind it with water of Gum-Arabick, Ultramarine.

XXIV. *Blew bice*, Grind it with clean water, as small you can, then put it into a shell, and wash it thus : put as much water to it as will fill up the vessel or shell, and stir it well, let it stand an hour, and the filth and dirty water cast away ; then put in more clean water, thus four or five times ; and at last put in Gum-Arabick water somewhat weak, that the Bice may fall to the bottom ; pour off the gum-water, and put more to it, wash it again, drie it, and mix it with weak gum-water (if you would have it rise of the same colour) with a stiff water of Gum-lake, if you would have most perfect blew ; if a light blew, grind it with a little Ceruse ; but if a most deep blew, add water of Litmose.

XXV. *Smalt*, Grind it with a little fine Roset, and it will make a deep Violet : and by putting in a quantity of Ceruse, it will make a light Violet.

XXVI. *Litmose blew*, Grind it with Ceruse : with too much Litmose it makes a deep Blew ; with too much Ceruse, a light blew : grind it with the weak water of Gum-Arabick.

Take fine Litmose, cut it in pieces, lay it in weak water of Gum-lake for twenty four hours, and you shall have a water of a most perfect Azure ; with which water you may

X. *Spanish brown*, Grind it with Brazil-water : mingle it with Ceruse and it makes a horse-flesh Colour.

XI. *Bole Armoniack*, It is a faint Colour ; its chief use is, in making size for burnish'd gold.

XII. *Green bice*, Order it as you do blew bice ; when it is moyst, and not through dry, you may diaper upon it with the water of deep green.

XIII. *Verdegriese*, Grind it with juyce of Rue, and a little weak gum-water, and you will have a most pure green : if you will diaper with it, grind it with Lye of Rue (or else the decoction thereof) and there will be a hoary green : Diaper upon Verdegriese green with sap-green : also Verdegriese ground with white Tartar, and then tempered with gum-water, gives a most perfect green.

XIV. *Verditure*, grind it with a weak Gum-Arabick water : it is the faintest green that is, but is good to lay upon black, in any kind of drapery.

XV. *Sap-green*, lay it in sharp vinegar all night ; put it into a little Alom to raise its colour, and you will have a good green to diaper upon other greens.

XVI. *Orpiment*, *Arsenicum* or *Auripigmentum*, grind it with a stiff water of Gum-lake, because it is the best colour of it self ; it will lie upon no green, for all greens, white and red lead ; and Ceruse stain it : wherefore you must deepen your colours so that the Orpiment may be highest, and so it may agree with all Colours.

XVII. *Mastieot*, Grind it with a small quantity of Saffron in gum-water, and never make it lighter than it is : it will endure to lie upon all colours and metals.

XVIII. *Saffron*, Steep it in Glair : it may be ground with Vermilion.

XIX. *Pink-yellow*, If you would have it sad coloured, grind it with Saffron ; if light, with Ceruse : mix it with weak gum-water, and so use it.

XX. *Oke*

XX. *Oker de Luce*, Grind it with pure Brazil-water : it makes a passing hair colour ; and is a natural shadow for gold.

XXI. *Umber*, It is a more sad colour. Grind it with Gum-water, or gum-lake ; and lighten it (if you please) with a little Ceruse and a blade of Saffron.

XXII. *Ultramarine*, If you would have it deep, grind it with Litmose-water ; but if light, with fine Ceruse, and a weak Gum-Arabick water.

XXIII. *Indico*, Grind it with water of Gum-Arabick, as Ultramarine.

XXIV. *Blew bice*, Grind it with clean water, as small as you can, then put it into a shell, and wash it thus : put as much water to it as will fill up the vessel or shell, and stir it well, let it stand an hour, and the filth and dirty water cast away ; then put in more clean water, do thus four or five times ; and at last put in Gum-Arabick water somewhat weak, that the Bice may fall to the bottom ; pour off the gum-water, and put more to it, wash it again, drie it, and mix it with weak gum-water (if you would have it rise of the same colour) but with a stiff water of Gum-lake, if you would have a most perfect blew ; if a light blew, grind it with a little Ceruse ; but if a most deep blew, add water of Litmose.

XXV. *Smalt*, Grind it with a little fine Roset, and it will make a deep Violet : and by putting in a quantity of Ceruse, it will make a light Violet.

XXVI. *Litmose blew*, Grind it with Ceruse : with too much Litmose it makes a deep Blew ; with too much Ceruse, a light blew : grind it with the weak water of Gum-Arabick.

Take fine Litmose, cut it in pieces, lay it in weak water of Gum-lake for twenty four hours, and you shall have a water of a most perfect Azure ; with which water you may

*Diaper and Damask, upon all other blews, to make them shew more fair and beautiful.*

XXVII. *Orchal*, Grind it with unslak'd Lime and Urine, it makes a pure Violet: by putting to more or less Lime, you may make the Violet light or deep as you please.

## CHAP. XIX.

### *Of Mixt and Compound Colours.*

I. **M**urry, It is a wonderful beautiful colour, composed of purple and white: it is made thus. Take *Sinaper-lake* two ounces; *white Lead* one ounce; grind them together. See the 24 Section.

II. *A Gliss grey*, Mingle Ceruse with a little Azure.

III. *A Bay colour*, Mingle Vermilion with a little Spanish brown and black.

IV. *A deep Purple*, It is made of Indico, Spanish brown and white.

*It is called in Latine Purpureus, in Greek πορφύρεος from πορφυρα, a kind of shell fish that yields a liquor of that colour.*

V. *An Ash colour, or Grey*, It is made by mixing white and Lamp-black; or white with Sinaper, Indico and black make an Ash colour.

*It is called in Latine Cæsius, and color Cinerius; in Greek γλαυκός and τεφερώδης.*

VI. *Light Green*, It is made of Pink and Smalt; with white to make it lighter if need require.

VII. *Saffron colour*, It is made of Saffron alone by infusion.

VIII. *Flame colour*, It is made of Vermilion and Orpiment,



Orpiment, mixed deep or light at pleasure: or thus: Take red Lead and mix it with Masticote, which heighten with white.

IX. *A Violet Colour*, Indico, white and Sinaper Lake make a good Violet. So also Ceruse and Litmose, of each equal parts.

X. *Lead colour*, It is made of White mixed with Indico.

XI. *Scarlet colour*, It is made of Red Lead, Lake, Vermilion: yet Vermilion in this case is not very useful.

XII. *To make Vermilion.*

Take Brimstone in powder one ounce, mix it with Quicksilver a pound, put it into a Crucible well luted, and upon a Charcoal fire heat it till it is red hot; then take it off and let it cool.

XIII. *To make a bright Crimson.*

Mix tincture of Brazil with a little Ceruse ground with fair water.

XIV. *To make a sad Crimson.*

Mix the aforesaid light Crimson with a little Indico ground with fair water.

XV. *To make a pure Lake.*

Take Urine twenty pound, boil it in a Kettle and scum it with an Iron Scummer till it comes to sixteen pound; to which add gum Lake one pound, Alom five ounces; boil all till it is well coloured, which you may try by dipping therein a piece of linnen cloth; then add sweet Alom in powder a sufficient quantity, strain it and let it stand; strain it again through a dry cloth till the liquor be clear: that which remains in the cloth or bag is the pure Lake.

XVI. *To make a Crimson Lake.*

It is usually made of the flocks shorn off from Crimson cloth by a Lye made of Salt-peter, which extracts the colour; which precipitate,

edulcorate, and dry in the Sun or a Stove.

**XVII. A pure Green.**

Take white Tartar and Verdegriese, temper them with strong white Wine Vinegar, in which a little gum Arabick hath been dissolved.

**XVIII. A pure Violet.**

Take a little Indico and tincture of Brazil, grind them with a little Ceruse.

**XIX. A pure Purple colour.**

Take fine Brimstone an ounce and an half, Quicksilver, Sal Armoniack, Jupiter, of each one ounce; beat the Brimstone and Salt into powder, and make an Amalgamie with the Quicksilver and Tinn, mix all together, which put into a great glass Goard; make under it an ordinary fire, and keep it in a constant heat for the space of six hours.

**XX. To make a Yellow Colour.**

Take the yellow chives in white Lilies, steep them in gum water, and it will make a perfect yellow; the same from Saffron and Tartar tempered with gum water.

**XXI. To make a Red colour.**

Take the roots of the lesser Bugloss, and beat them, and strain out the juice, and mix it with Alom water.

**XXII. To make excellent good Greens.**

The Liver of a Lampry makes an excellent and durable grass green: and yellow laid upon blew will change into green: so likewise the juice of a blew Flower-de-luce, mixed with gum water, will be a perfect and durable green or blew, according as it is used.

**XXIII. To make a Purple colour.**

Take the juice of Bilberries and mix it with Alom and Galls, and so paint with it.

**XXIV. To make a good Murry.**

Temper Roset with a little Rose water, in which a little

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little gum hath been dissolved, and it will be good ; but not exceeding that at the first Section of this Chapter.

**XXV. To make Azure or Bleu.**

Mix the Azure with glew water, and not with gum water.

**XXVI. To make a Yellow, Green, or Purple.**

Buckthorn Berries gathered green and steeped in Alom water yield a good yellow : but being through ripe and black (by the eighteenth Section of the twenty first Chapter of the third Book) they yield a good green : and lastly, being gathered when they are ready to drop off, which is about the middle or end of November, their juice mixt with Alom water yields a good purple colour.

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C H A P. XX.

*Of Colours for Drapery.*

**I. FOR Yellow garments.** Take Masticot deepned with brown Oker and red Lead.

**II. For Searles.** Take Vermilion deepned with Sina-per lake, and heightned with touches of Masticot.

**III. For Crimson.** Lay on Lake very thin, and deepen with the same.

**IV. For Purple.** Grinde Lake and Smalt together : or take blew Bice, and mix it with red and white Lead.

**V. For an Orient Violet.** Grind Litmose, blew Smalt, and Ceruse ; but in mixture let the blew have the upper hand.

**VI. For Bleu.** Take Azure deepned with Indie blews ; or Lake heightned with white.

**VII. For black Velvet.** Lay the garment first over with

with Ivory black, then heighten it with Cherrystone black, and a little white.

VIII. *For black Sattin.* Take Cherrystone black; then white deepned with Cherrystone black; and then lastly, Ivory black.

IX. *For a pure Green.* Take Verdegriese, bruise it, and steep it in Muscadine for twelve hours, then strain it into a shell, to which add a little Sap green: (but put no gum thereto.)

X. *For a Carnation.* Grind Ceruse, well washed, with red Lead; or Ceruse and Vermilion.

XI. *For Cloth of Gold.* Take brown Oker, and liquid Gold water, and heighten upon the same with small stroaks of Gold.

XII. *For white Sattin.* Take first fine Ceruse, which deepen with Cherrystone black, then heighten again with Ceruse, and fine touches, where the light falleth.

XIII. *For a russet Sattin.* Take Indy blew and Lake, first thin, and then deepned with Indy again.

XIV. *For a hair Colour.* It is made out of Masticot, Umber, yellow Oker, Ceruse, Oker de Rous, and Sea-coal.

XV. *For a Popinjay green:* Take a perfect green mingled with Masticot.

XVI. *For changeable Silk.* Take water of Masticot and red Lead; which deepen with Sap green.

XVII. *For a light Blew.* Take blew Bice, heightned with Ceruse or Spodium.

XVIII. *For to shadow Russet.* Take Cherrystone black, and white; lay a light russet, then shadow it with white.

XIX. *For a Skit colour.* Take blew Bice and Venice Ceruse: but if you would have it dark, take some blew and white.



XX. *For a Straw colour.* Take Masticot ; then white heightened with Masticot, and deepned with Pink. Or thus. Take red Lead deepned with Lake.

XXI. *For Yellowish.* Thin Pink deepned with pink and green : Orpiment burned makes a Marigold colour.

XXII. *For a Peach colour.* Take Brazil water, Log water and Ceruse.

XXIII. *For a light Purple.* Mingle Ceruse with Logwood water : or take Turnsole mingled with a little Lake, Smalt and Bice.

XXIV. *For a Walnut colour.* Red Lead thinly laid, and shadowed with Spanith brown.

XXV. *For a Fire colour.* Take Masticot, and deepen it with Masticot for the flame.

XXVI. *For a Tree.* Take Umber and white, wrought with Umber, deepned with black.

XXVII. *For the Leaves.* Take Sap green and green Bice, heighten it with Verditure and white.

XXVIII. *For Water.* Blew and white, deepned with blew, and heightned with white.

XXIX. *For Banks.* Thin Umber, deepned with Umber and black.

XXX. *For Feathers.* Take Lake frizled with red Lead.

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C H A P. XXI.

*Of Liquid Gold and Silver.*

**I** *Liquid Gold or Silver.*

Take five or six leaves of Gold or Silver, which grind

grind (with a stiff gum Lake water, and a good quantity of salt) as small as you can; then put it into a vial or glazed vessel; add so much fair water as may dissolve the stiff gum water; then let it stand four hours, that the gold may settle: decant the water, and put in more, till the gold is clean washed: to the gold put more fair water, a little sal Armoniack and common salt, digesting it close for four days: then put all into a piece of thin Glovers leather (whose grain is peeced off) and hang it up, so will the sal Armoniack fret away, and the gold remain behind, which keep.

Or thus, Grind fine leaf Gold with strong or thick gum water very fine; and as you grind add more thick gum water; being very fine, wash it in a great shell, as you do bice: then temper it with a little quantity of Mercury sublimate, and a little dissolved gum to bind it in the shell; shake it, and spread the Gold about the sides thereof, that it may be all of one colour and fineness, which use with fair waters, as you do other Colours. The same observe in liquid Silver; with this observation, That if your Silver, by length of time, or humidity of the air becomes rusty; then cover the place with juice of Garlick before you lay on the Silver, which will preserve it.

When you use it, temper it with glair of eggs, and so use it with pen or pencil. Glair of Eggs is thus made. Take the whites and beat them with a spoon, till that rise all in a foam; then let them stand all night, and by morning they will be turned into clear water, which is good glair.

## II. Argentum Musicum.

Take one ounce of tin, melt it, and put thereto of Tartar and Quicksilver of each one ounce, stir them well together until they be cold, then beat it in a mortar and grind it on a stone; mix it with gum water, write therewith, and afterwards polish it.

## III. Burnished Gold or Silver.

Take

Take gum-lake and dissolve it into a stiff water; then grind a blade or two of Saffron therewith, and you shall have a fair gold: when you have set it, being thoroughly dry, burnish it with a dogs tooth. Or thus, having writ with your pen or pencil what you please, cut the Leaf Gold or Silver into pieces, according to the draught, which take up with a feather and lay it upon the drawing, which press down with a piece of wool; and being dry, burnish it.

IV. *Gold Armoniack.*

This is nothing but that which we have taught at the fourth Section of the sixteenth Chapter of this Book.

V. *Size for burnished Gold.*

Take Bole Armoniack three drachms, fine Chalk one drachm; grind them as small as you can together with fair water, three or four times, letting it dry after every time: then take glair and strain it as short as water, with which grind the Bole and Chalk, adding a little gum Hedera, and a few blades of Saffron: grind all as small as possible, and put them into an Ox horn (I judge a glass vessel better) and set it to rot in horse-dung for six weeks; then take it up, and let it have air, and keep it for use.

*Its use is for gilding parchments, book covers, and leather, thus; lay this size first upon the parchment, then with a feather lay the Gold or Silver upon it, which when dry, burnish it.*

VI. *To diaper on Gold or Silver.*

You must diaper on Gold with Lake and yellow Oker: but upon Silver with Ceruse.

VII. *Aurum Musicum.*

Take fine Crystal, Orpiment, of each one ounce, beat each severally into a fine powder, then grind them together well with glair.

You

You may write with it, with pen or pencil, and your letters or draught will be of a good gold colour.

## CHAP. XXII.

### *Of Preparing the Colours.*

I. **C**olours, according to their natures, have each a particular way of preparation : to wit, by grinding, washing or steeping.

II. The chief *Colours to be ground* are these ; White Lead, Ceruse, Sinaper Lake, Oker, Pink, Indico, Umber, Colens Earth, Spanish Brown, Ivory Black, Cherystone Black.

III. The chief *Colours to be wash'd* are Red Lead, Masticot, green Bice, Cedar green, Ultramarine, blew Bice, Smalt, Verditure.

IV. The chief *Colours to be steep'd*, are Sap-green, Saffron, Turnsole, Stone blew, Venice berries.

#### V. *To Grind Colours.*

Take the colour you would grind, and scrape off from it all the filth, then lay it upon the stone, and with the muller bruise it a little ; then put thereto a little spring water, and grind all together very well, till the colour is very fine ; which done, pour it out into certain hollows or furrows cut in chalk-stone, and there let it lie till it is dry, which reserve in papers or glasses.

#### VI. *To Wash colours.*

Put the colour into a glazed vessel, and put thereto fair water plentifully, wash it well, and decant (after a while) the water ; do this six or seven times ; at last put

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## Of preparing the Colours.

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put the water (being just troubled) into another glazed vessel, leaving the dregs at bottom: then into this second vessel put more fair water, washing it as before, till the water (being settled) be clear, and the colour remain fine at bottom: we have taught another way at the twenty fourth Section of the eighteenth Chapter of this Book.

## VII. To steep Colours.

Take a quantity thereof, and put it into a shell, and fill the shell with fair water, to which add some fine powder of Alom, to raise the Colour; let it thus steep a day and night, and you will have a good colour.

*Where note; Saffron steeped in vinegar gives a good colour; and the Venice berries in fair water and a little Alom, or a drop or two of oyl of Vitriol makes a fair yellow.*

## VIII. To temper the colours.

Take a little of any colour, and put it into a clean shell, and add thereto a few drops of gum water, and with your fingers work it about the shell, then let it dry; when dry, touch it with your fingers, if any colour comes off, you must add stronger gum water: but being dry, if the colour glister or shine, it is a sign there is too much gum in it, which you may remedy by putting in fair water.

## IX. To help the defects.

Some colours as Lake, Umber, and others which are hard, will crack when they are dry; in this case, in tempering them add a little white Sugar candy in very fine powder, which mix with the colour and fair water in the shell, till the Sugar candy is dissolved.

X. These colours, Umber, Spanish brown, Colen earth, Cherrystone, and Ivory black, are to be burnt before they be ground or wash'd.

## XI. To burn or calcine Colours.

This

This is done in a crucible, covering the mouth thereof with clay, and setting it in a hot fire, till you are sure it is red hot through : which done, being cold, wash or grind it as aforesaid.

**XII.** *To prepare shadows for Colours.*

White is shaded with black, and contrariwise : yellow with Umber, and the Okers : Vermilion with Lake : blew Bice with Indie : Black coal with Roset, &c.

## CHAP. XXIII.

### *Of the Manual Instruments.*

**I.** The manual Instruments are four (by the second Section of the fifteenth Chapter of this Book) to wit, The *Grinding stone* and *Muller* ; *Pencils* ; *Tables* to *Limn* on ; and *shells* or little glasses or China dishes.

**II.** The *Grinding stone* may be of *Porphury*, *Serpentine* or *Marble*, but rather a *Pebble*, for that is the best of all others : the *Muller* only of *pebble*, which keep very clean.

*These may be easily got of Marblers or Stone-cutters in London.*

**III.** Choose your pencils thus : by their fastness in the quills, and their sharp points after you have drawn or wetted them in your mouth two or three times ; so that although larger yet their points will come to as small as a hair, which then are good ; but if they spread or have any extravagant hairs they are naught.

*To wash your Pencils.*

After

## *Of preparations for Limning.*

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After using them, rub the ends of them well with soap, then lay them a while in warm water to steep, then take them out and wash them well in other salt water.

### *V. To prepare the Table.*

It must be made of pure fine paste-board, such as Cards are made of (of what thickness you please) very finely slick'd and glazed. Take a piece of this paste-board of the bigness you intend the picture, and a piece of the finest and whitest parchment you can get (virgin parchment) which cut of equal bigness with the paste board; with thin, white, new made starch, paste the parchment to the paste-board, with the outside of the skin outwardmost: lay on the starch very thin and eaven; then the grinding stone being clean, lay the card thereon with the parchment side downwards, and as hard as you can, rub the other side of the paste-board with a Boars tooth set in a stick; then let it be thorow drier, and it will be fit to work or limn any curious thing upon.

VI. The shells holding or containing your colours, ought to be Horse-muscle shells, which may be got in July about Rivers sides; but the next to these are small muscle shells, or in stead thereof little China or glass vessels.

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## CHAP. XXIV.

### *Of Preparations for Limning.*

I. **H**Ave two small glass or China dishes, in either of which must be pure clean water, the one to wash the pencils in being foul; the other to temper

per the colours with, when there is occasion.

II. Besides the pencils you Limn with; a large, clean, and dry pencil, to cleanse the work from any kind of dust, that may fall upon it, which one called Fitch-Pencils.

III. A sharp Pen-knife to take off hairs that may come from your pencil, either among the colours or upon the work; or to take out spots that may fall upon the card or table.

IV. A Paper with a hole cut therein, to lay over the Card, to keep it from dust and filth, to rest your hand upon, and to keep the soil and sweat of your hand from sullyng the parchment, as also to try your pencils on before you use them.

*Let the small glasses, waters, pencils and pen-knife lie all on the right hand.*

V. Have ready a quantity of light carnation or flesh colour temper'd up in a shell by it self with a weak gum water; If it be a fair complexion, mix white and red Lead together; if a brown or swarthy, add to the former, Masticot, or English Oker, or both: but be sure the flesh colour be always lighter than the complexion you would limn; for by working on it you may bring it to its true colour.

VI. In a large Horse-muscle shell place your several shadows (for the flesh colour) in little places one distinct from another.

VII. In all shadowings have ready some white, and lay a good quantity of it by it self, besides what the shadows are first mixed with: for red for the cheeks and lips, temper Lake and red Lead together: for blew shadows (as under the eyes and in veins) Indico or Ultramarine and white: for gray faint shadows, white, English Oker, sometimes Masticot: for deep shadows, white, English Oker, Umber: for dark shadows, Lake and Pink, which make a good fleshy shadow.

VIII. To



**VIII.** To make choice of the light.

Let it be fair and large and free from shadows of trees or houses, but all clear Skie light, and let it be direct from above, and not transverse; let it be northerly and not southerly; and let the room be close and clean, and free from the Sun-beams.

**IX.** Of the manner of sitting.

Let your desk on which you work be so situate, that sitting before it, your left arm may be towards the light, that the light may strike sidling upon your work: Let the party that is to be Limned, be in what posture themselves will design, but not above two yards off you at most, and level with you; wherein observe their motion, if never so small, for the least motion, if not recalled, may in short time bring on you many errors: Lastly, the face being finished, let the party stand (not sit) at a farther distance (four or five yards off) to draw the posture of his clothes.

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C H A P. XXV.

*Of the Practice of Limning in Miniture, or Drawing of a Face in Colours.*

**I.** *To begin the work.*

Have all things in a readines (as before) then on the Card lay the prepared colour (answerable to the complexion presented) even and thin, free from hairs and spots, over the place where the picture is to be: the ground thus laid, begin the work, the party being set, which must be done at three sittings: at the first sitting the face is only dead coloured, which takes up about two hours time: at the second sitting, go over the work more curiously, adding its particular graces

graces or deformities, sweetly couching the colours, which will take up about five hours time : at the third sitting finish the face, in which you must perfect all that is imperfect and rough, putting the deep shadows in the face, as in the eyes, eye-brows, and ears, which are the last of the work, and not to be done till the hair curtain, or backside of the picture, and the drape-ry be wholly finished.

II. *The operation or work, at first sitting.*

The ground for the complexion being laid, draw the out-lines of the face, which do with Lake and white mingled ; draw faintly, that if you miss in proportion or colour you may alter it : this done, add to the former colour red Lead, for the cheeks and lips ; let it be but faint (for you cannot lighten a deep colour) and make the shadows in their due places, as in the cheeks, lips, tip of the chin and ears, the eyes and roots of the hair : shadow not with a flat pencil, but by small touches (as in hatching) and so go over the face. In this dead covering rather than to be curious, strive as near as may be to imitate nature. The red shadows being put in their due places ; shadow with a faint blew, about the corners and balls of the eyes ; and with a grayish blew under the eyes and about the temples, heightning the shadows as the light falls, as also the harder shadows in the dark side of the face, under the eye-brows, chin and neck. Bring all the work to an equality, but add perfection to no particular part at this time ; but imitate the life in likeness, roundness, boldness, posture, colour, and the like. Lastly, touch at the hair with a suitable colour in such curls, folds and form, as may either agree with the life, or grace the picture ; fill the empty places with colour, and deepen it more strongly, than in the deepest shadowed before.

III. *The*

III. *The operation or work at second sitting.*

As before rudely, so now you must sweeten those varieties which Nature affords, with the same colours and in the same places, driving them one into another, yet so as that no lump or spot of colour, or rough edge may appear in the whole work; and this must be done with a pencil sharper than that which was used before. This done, go to the backside of the picture, which may be Landskip, or a curtain of blew or red Sattin: if of blew, temper as much Bice as will cover a Card, and let it be well mixed with gum; with a pencil draw the out-line of the Curtain; as also of the whole picture; then with a large pencil lay thinly or airily over the whole ground, on which you mean to lay the blew; and then with a large pencil, lay over the same a substantial body of colour; in doing of which, be nimble, keeping the colour moist, letting no part thereof be drie till the whole be covered. If the Curtain be crimson, trace it out with lake; lay the ground with a thin colour; and lay the light with a thin and waterish colour, where they fall; and while the ground is yet wet, with a strong dark colour tempered something thick, lay the strong and hard shadows close by the other lights. Then lay the linnen with faint white, and the drapery flat, of the colour you intend it. In the face, see what shadows are too light or too deep, for the Curtain behind, and drapery, and reduce each to their due perfection; draw the lines of the eyelids, and shadow the entrance into the ear, deepness of the eye-brows, and eminent marks in the face, with a very sharp pencil: lastly, go over the hair, colouring it as it appears in the life, casting over the ground some loose hairs, which will make the picture stand as it were at a distance from the curtain: *Shadow the linnen with white, black,*  
and

and a little yellow and blew ; and deepen your black with Ivory black, mixed with a little Lake and Indico.

IV. *The operation or work at third sitting.*

This third work is wholly spent in giving strong touches where you see cause ; in rounding, smoothing and colouring the face, which you may better see to do, now the curtain and drapery is limned than before. And now observe whatsoever may conduce to the perfection of your work, as gesture, skars or moles, casts of the eyes, windings of the mouth, and the like.

C H A P. XXVI.

*Of Limning Drapery.*

I. **A** Full and substantial ground being laid all over where you intend the drapery ; as if blew, with Bice smoothly laid, deepen it with Lake and Indico ; lightning it with a fine faint white, in the extreme light places, the which understand of other colours.

II. If the body you draw be in *Armour*, lay liquid silver all over for a ground, well dried and burnished ; shadow it with Silver, Indico and Umber, according as the life directs you.

III. For *Gold Armour*, lay liquid gold as you did the silver, and shadow upon it with Lake, English Oker, and a little gold.

IV. For *Pearls*, your ground must be Indico and white ; the shadows black and pink.

V. For *Diamonds*, lay a ground of liquid silver, and



and deepen it with Cherrystone black and Ivory black.

VI. For *Rubies*, lay a silver ground, which burnish to the bigness of a Rubie : then with pure Turpentine temper'd with Indian Lake, from a small wire heated in a Candle, drop upon the burnished place, fashioning it as you please with your Instruments, which let lie a day or two to dry.

VII. For *Emeraulds*, or any green stone, temper Turpentine with Verdigriese, and a little Turmerick root, first scraped, with Vinegar, drying it, grind it to fine powder and mix it.

VIII. For *Saphyres*, mix or temper Ultramarine with pure Turpentine, which lay upon a ground of liquid Silver polisht.

To make liquid Gold or Silver, see the first Section of the twenty first Chapter of this Book.

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C H A P. XXVII.

*Of Limning Landskip.*

**A**LL the variable expressions of Landskip are innumerable, they being as many as there are men and fancies ; the general rules follow.

I. Always begin with the Sky, Sunbeams, or lightest parts first ; next the yellowish beams ( which make of Masticot and white ) next the blewness of the Skie, (which make of Smalt only.)

II. At first colouring, leave no part of the ground uncovered, but lay the colours smooth all over.

III. Work the Sky downwards : towards the Horizon fainter and fainter, as it draws nearer and nearer the

the earth : the tops of mountains far remote, work so faint that they may appear as lost in the air.

IV. Let places low, and near the ground be of the colour of the earth, of a dark yellowish, or brown green ; the next lighter green ; and so successively as they lose in distance, let them abate in colour.

V. Make nothing which you see at a distance perfect, by expressing any particular sign which it hath, but express it in colours, as weakly and faintly as the eye judgeth of it.

VI. Always place light against darkness and darkness against light, by which means you may extend the prospect as a very far off.

VII. Let all shadows lose their force as they remove from the eye ; always letting the strongest shadow be nearest hand.

VIII. Lastly, Take Isinglass in small pieces half an ounce, fair Conduit water two quarts, boil it till the glass is dissolved, which save for use : with which mix spirit or oyl of Cloves, Roses, Cinnamon or Amber-griese, and lay it on and about the Picture where it is not coloured (lest it should change the Colours : but upon the Colours use it without the perfumes) so it will varnish your Pictures, and give them a gloss, retaining the glory of their colours, and take from them any ill scent which they might otherwise retain.

*Horat. Epod. 16.*

Vos, quibus est virtus, muliebrem tollite luctum,  
Etrusca præter & volate littora.

Nos manet Oceanus circumvagus ; arva, beata  
Petamus arva, divites & insulas :

Reddit ubi Cererem tellus inarata quotannis,  
Et imputata floret usquè vinea.

*Germinet*

Germinet & nunquam fallentis termes olivæ,  
 Suâmq; pulla ficus ornat arborem.  
 Illis injussæ veniunt ad mulctra capellæ:  
 Resertque tenta grex amicus ubera.  
 Nec Vespertinus circumgemit ursus ovile,  
 Nec intumescit alta viperis humus:  
 Plurâque felices mirabimur: ut neque largis  
 Aquosus Eurus arva radat imbribus,  
 Pinguia nec siccis urantur semina glebis:  
 Utrumque rege temperante Coelitem.  
 Non huc Argoo contendit remige pinus,  
 Neque impudica Colchis intulit pedem:  
 Non huc Sidonii torserunt cornua nautæ,  
 Laboriosa nec cohors Ulyssæi.  
 Nulla nocent pecori contagia, nullius astri  
 Gregem æstuosa torret impotentia.  
 Jupiter illa piæ secrevit littora genti,  
 Ut inquinavit ære tempus aureum.

*You nobler spirits, hence with womens tears,  
 Sail from Etruscan confines free from fears.  
 The Earth encircling Ocean us invites,  
 Rich Islands, Fields, Fields blest with all delights.  
 Where Lands untill'd are yearly fruitful seen,  
 And the unpruned vine perpetual green.  
 Still, Olives by the fruitful branch are born,  
 And mellow Figs their native trees adorn.  
 There milchy goats come freely to the pail,  
 Nor do glad flocks with dugs distended fail.  
 The mighty Bear roars not about the fold,  
 Nor hollow earth doth poysonous Vipers hold.  
 Add to this happiness, the humid East  
 Doth not with frequent showers the fields infest.  
 Nor the fat seeds are parcht in barren land,  
 The powers above both temp'ring with command.*

No Bark came hither with Argoan oar,  
Nor landed wanton Colchis on this shoar :  
Cadmus with filled sails turn'd not this way,  
Nor painful troops that with Ulysses stray.  
Here amongst cattel no Contagions are,  
Nor feel flocks droughy power of any star.  
When brass did on the golden Age intrude,  
Jove for the pious did this place seclude.

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*Libri Polygraphices secundi*

**FINIS.**

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# P O L Y G R A P H I C E S

## L I B E R T E R T I U S.

Of Painting, Washing, Colouring, Dying, Varnishing and Gilding.

*Containing the description and use of all the chief Instruments and Materials ; the way and manner of working, together with the beginning, progress and end thereof.*

Exemplified in the Painting of the Antients: the washing of Maps, Globes or Pictures : Dying of Cloath, Silks, Horns, Bones, Woods, Glafs, Stones and Metals : Together with the Gilding and Varnishing thereof, according to any purpose or intent.

### C H A P. I.

*Of Painting in Oyl, and the Materials thereof.*

I. **P**ainting in Oyl is nothing but the work or Art of Limning performed with colours made up or mixed with oyl.

II. The Materials of Painting are chiefly seven, 1. *The Easel*, 2. *The Pallet*, 3. *The Straining frame*, 4. *The Primed cloath*, 5. *Pencils*, 6. *The Stay*, 7. *Colours*.

III. *The Easel* is a Frame made of wood (much like a ladder)

ladder) with sides flat, and full of holes, to put in two pins to set your work upon higher or lower at pleasure; something broader at bottom than at the top; on the backside whereof is a stay, by which you may set the Easel more upright or sloping.

IV. The *Pallet* is a thin piece of wood, (Peartree or Walnut) a foot long, and about ten inches broad, almost like an Egg, at the narrowest end of which is made an hole, to put in the thumb of the left hand, near to which is cut a notch, that so you may hold the pallet in your hand. *Its use is to hold and temper the Colours upon.*

V. The *Streining frame* is made of wood, to which with nails is fastned the primed cloath, which is to be painted upon.

*These ought to be of several sizes according to the bigness of the cloath.*

VI. The *Primed cloath* is that which is to be painted upon; and is thus prepared.

*Take good Canvase and smooth it over with a slick-stone, size it over with size, and a little boney, and let it dry; then white it over once with whitening and size mixed with a little boney, so is the cloath prepared, on which you may draw the picture with a coal, and lastly lay on the Colours.*

*Where note, boney keeps it from cracking, peeling or breaking out.*

VII. *Pencils* are of all bignesses, from a pin to the bigness of a finger, called by several names, as *Duck's quill fitch*ed and pointed; *Goose quill fitch*ed and pointed; *Swans quill fitch*ed and pointed; *Jewelling pencils*, and *bristle pencils*: some in quills, some in tinn cases, and some in sticks.

VIII. The *Stay* or *Mol-stick*, is a Brazil stick (or the like) of a yard long; having at the one end thereof, a little ball of Cotton, fixed hard in a piece of leather,

er, of the bigness of a chestnut ; which when you  
e at work you must hold in your left hand ; and lay-  
g the end which hath the leather ball upon the cloath  
r frame, you may rest your right arm upon it, whilst  
ou are at work.

IX. The Colours are in number seven (*ut supra*) to  
vit, White, Black, Red, Green, Yellow, Blew, and  
brown.

*Of which some may be tempered on the pallet at first ; some  
must be ground, and then tempered ; and other some must be  
burnt, ground, and lastly tempered.*

X. To make the size for the primed cloath at the  
fifth Section of this Chapter.

*Take glew, and boil it well in fair water, till it be dis-  
solved, and it is done.*

XI. To make the whiting for the fifth Section of  
this Chapter.

*Take of the aforesaid size, mix it with whiting ground, and  
so white your boards or cloath (being made smooth) dry  
them, and white them a second or third time ; lastly, scrape  
them smooth and draw it over with white Lead tempered  
with oyl.*

XII. To keep the Colours from skinning.

*Oyl colours (if not presently used) will have a skin grow  
over them, to prevent which, put them into a glass, and put  
the glass three or four inches under water, so will they neither  
skin nor dry.*

XIII. To cleanse the Grinding stone and Pencils.

*If the grinding stone be foul, grind Curriers shavings upon  
it, and then crumbs of bread, so will the filth come off : if  
the pencils be foul, dip the end of them in oyl of Turpentine,  
and squeeze them between your fingers, and they will be very  
clean.*

## C H A P. II.

*Of the Colours in General, and their significations.*

I. **T**He chief *Whites* for painting in oyl are, white Lead, Ceruse and Spodium.

II. The chief *Blacks* are, Lamp black, Seacoal black, Ivory black, Charcoal, and earth of Colen.

III. The chief *Reds* are, Vermilion, Sinaper lake, red Lead, Indian Red, Ornotto.

IV. The chief *Greens* are, Verdigriese, Terra vert, Verditer.

V. The chief *Yellows* are, Pink, Masticot, English Oker, Spruse Oker, Orpiment.

VI. The chief *Blews* are, blew Bice, Indico, Ultramarine, Smalt.

VII. The chief *Browns* are, Spanish brown, burnt Spruce, Umber.

VIII. These Colours, Lamp black, Verditer, Vermilion, Bice, Smalt, Masticot, Orpiment, Ultramarine, are not to be ground at all, but only tempered with oyl upon the Pallet.

IX. These colours, Ivory, Ceruse, Oker and Umber are to be burnt, and then ground with oyl.

X. All the rest are to be ground upon the Grinding stone with Linseed oyl (except white Lead, when it is to be used for Linnen, which then is to be ground with oyl of Walnuts, for Linseed oyl will make it turn yellow.)

*And now since we are engaged to treat of colours, it may neither be unnecessary, nor unuseful for the young Artist to know their natural significations; which take as followeth.*

XI. *Blew* signifieth truth, faith, and continued affections;

*Azure*



ure, Constancy; *Violet*, a religious mind.

XII. *Orange tawny*, signifies Pride, also integrity; *tawny*, forsaken; *Limmon*, jealousy.

XIII. *Green* signifies hope: *grass-green*, youth, youthfulness, and rejoicing: *Sea green*, Inconstancy.

XIV. *Red* signifies Justice, Vertue and Defence: *same-colour*, Beauty and desire: *Maidens-blush*, envy.

XV. *Yellow* signifies Jealousie: *perfect yellow*, Joy, honour, and greatness of Spirit: *Gold-colour*, Avarice,

XVI. *Flesh-colour* signifieth lasciviousness: *Carnation*, craft, Subtilty and Deceit: *Purple*, Fortitude and strength.

XVII. *Willow-colour* signifieth forsaken: *Poppingjay-green*, Wantoness: *Peach-colour*, Love.

XVIII. *White* signifieth Death: *Milk-white*, Innocency, Purity, Truth, Integrity: *Black*, Wisdom, Sorriety, and Mourning.

XIX. *Straw-colour* signifieth plenty: *Rust of Iron*, Witheredness: *Ermine*, Religion and Holiness.

XX. *The White, Black, Red and green, are colours held sacred in the Church of Rome: White* is worn in the festivals of Virgins, Saints, Confessors and Angels, to shew their Innocency: *Red* in the solemnities of the Apostles and Martyrs of Jesus: *Black* in Lent and other fasting days: *Green* is worn between the *Epiphany* and *Sepuagesima*: and between *Pentecost* and *Advent*.

## C H A P. III.

*Of the fitting of Colours for Painting.*

I. **U**Pon the Pallet dispose the several colours, at a convenient distance, that they may not intermix; first lay on the Vermilion, then the Lake, then the burnt Oker, then the India Red, Pink, Umber, Black and Smalt, each in their order, and lay the white next to your thumb, because it is oftneft used, for with it all shadows are to be lightned; and next the white a stiff sort of Lake; thus is the Pallet furnished with single colours for a face.

*Now to temper them for shadowing various complexions do thus.*

II. For a fair complexion.

*Take White one Drachm; Vermilion, Lake of each two Drachms; temper them, and lay them aside for the deepest Carnation of the face: to part of the aforesaid mixture put a little more white, for a light carnation: and to part of that put more white (which temper on the Pallet) for the lightest colour of the face.*

III. The faint shadows for the fair complexion.

*Take Smalt, and a little White, for the eyes: to part of that add a little pink, and temper by it self for faint greenish shadows in the face.*

IV. The deep shadows for the same.

*Take Sinaper Lake, Pink, and black of each, which temper together; if the shadows ought to be redder than what is tempered, add more Lake: if yellower, add more pink: if blower or grayer, add more black; thus shall the Pallet be fitted with colours.*

V. For a brown or swarthy complexion.

*The single colour being laid on the Pallet as before, and tempered;*

tempered; to the *White, Lake, and Vermilion*, put a little burnt Oker for a *Tawney*: and for heightning adde some yellow Oker, so much as may just change the colours. The faint and deep shadows are the same at the third and fourth Section of this Chapter.

VI. For a tawny Complexion.

The colours are the same with the former, but the shadows are different; which must be made of burnt Oker and Umber, (which will fit well:) if the shadow be not yellow enough, add a little pink to it.

VII. For a black Complexion.

The dark shadows are the same with the former: but for heightning take *White, Black, Lake and burnt Oker*; in tempering of which put in the white by degrees, till you come to the lightest of all. Where note, that the single colours at first laid upon the Pallet and tempered, serve for shadows for all complexions; and that all deepnings ought to be with black, Lake and pink tempered together.

C H A P. IV.

Of Colours for Velvet.

I. **F**OR black Velvet. Take Lamp black and Verdigrise for the first ground; that being drie, take Ivory black, and Verdigrise; shadow it with white Lead mixed with Lamp black.

II. For Green. Take Lamp black and white Lead, and work it like a russet Velvet, and let it drie; then draw it over with Verdigrise tempered with a little pink.

III. For Sea Green. Take only Verdigrise and lay it over Russet: If a Grass-green, put a little Masticot to it: shadow these greens with Russet; which lay according

ording to the deepness of the green.

IV. *For Red.* Take Vermilion, and shadow it with Spanish brown : and where you would have it darkest, shadow with Seacoal black and Spanish brown with the aforesaid colours ; drie it, and then gloss it over with Lake.

V. *For Crimson or Carnation.* Take Vermilion, to which add white Lead at pleasure.

VI. *For Blew.* Take Smalt tempered alone.

VII. *For Yellow.* Take Masticot and yellow Oker ; and where you would have it darkest, shadow it with Umber.

VIII. *For Tawney.* Take Spanish brown , white Lead, and Lamp Black, with a little Verdigrise, to shadow where need is : when drie, gloss it over with Lake and a little red Lead.

IX. *For hair colour.* Take Umber ground alone ; and where it should be brightest, mix some white Lead about the folds, lighten or darken with white Lead and Umber.

X. *For Ash colour.* Take Charcoal, black and white Lead : lighten with white Lead : *a colour like to a dark russet will be an Ash colour.*

XI. *For purple.* Take Smalt and Lake, of each alike, temper them ( light or deep as you please ) with white Lead.

XII. *Lastly note,* that in painting Velvet you must at first work it somewhat sad, and then give it a sudden brightness.



C H A P. V.

*Of colours for Sattins.*

I. *FOR Black.* Take Lamp-black ground with oyl and tempered with white Lead; and where you would have it shine most, mix Lake with the white Lead.

II. *For Green.* Take Verdigrise ground alone and mixed with white Lead; adding Pink where you would have it brightest: to the deepest shadows add more Verdigrise.

III. *For Yellow.* Take Masticot, yellow Oker and Umber (ground each by themselves) where it should be brightest, use Masticot alone; where a light shadow, use Oker; where darkest, use Umber.

IV. *For Purple.* Take Smalt alone, and where it should be brightest, use white Lead.

V. *For Red.* Take Spanish brown (ground alone) mix it with Vermilion, and where it should be brightest, mix white Lead with the Vermilion.

VI. *For White.* Take white Lead (ground alone) and Ivory black, which temper light or dark.

VII. *For Bleu.* Temper Smalt and white Lead; where it should be saddest, use Smalt; where lightest, white Lead.

VIII. *For Orange colour.* Take red Lead and Lake; where brightest, red Lead; where saddest, Lake.

IX. *For Hair colour.* Temper Umber and white Lead; where it should be brightest, put more white Lead; and where the greatest shadow, use seacoal Black mixed with Umber.

## C H A P. VI.

*Of Colours for Taffatie, Cloth and Leather.*

**T***Affaties* are painted much as *Sattins*, thus : Take such colours as are fit for the purpose, and lay them one by another upon the work, and shadow them with others.

II. *Cloth* is the same work with *Sattin*, save, you must not give to cloth so sudden a shining gloss.

III. *Cloth of Gold* is made of brown Oker and liquid Gold; water and heighten upon the same with small gold stroaks.

IV. *For Buff*, mix yellow Oker and White lead; and where it should be dark by degrees, mix it with a little Umber; when you have done, size it over with Umber and seacoal Black.

V. *For yellow Leather*, take Masticot and yellow Oker: shadow it with Umber.

VI. *For black Leather*, take Lamp black, and shadow it with white Lead.

VII. *For white Leather*, take white Lead, and shadow it with Ivory black.

## C H A P. VII.

*Of Colours for Garments in general.*

**I. F O R** *Black*. Let the dead colour be Lamp black and Verdigrise: being dry, go over with Ivory black and Verdigrise: but before the second going over, heighten it with white.

II. *For*

III. *Of Colours for Garments in general.* 131

II. *For Hair colour.* Take Umber and White for the ground; Umber and black for the deeper shadows; Umber and English Oker for the meaner shadows; white and English Oker for heightning.

III. *For Blew.* Take Indico and White: first lay the White, then the Indico and White mixed; then deepen it with Indico; and when drie, glaze it with Ultramarine which will never fade.

*Smalt will turn black, and Bice will turn green.*

IV. *For Purple.* Take Smalt tempered with Lake and white Lead; then heighten with white Lead.

V. *For a sad Red.* Take Indian Red heightned with White.

VI. *For a light Red.* Take Vermilion; glaze it over with Lake, and heighten it with White.

VII. *For a Scarlet.* Take Vermilion, and deepen it with Lake or Indian red.

VIII. *For Green.* Take Bice and Pink, heighten it with Masticot, and deepen with Indico and Pink.

IX. *For Yellow.* Take Masticot, yellow Oker, Umber; lay Masticot and White in the lightest places; Oker and White in the mean places; and Umber in the darkest; glaze it with Pink.

X. *For Orange colour.* Lay the lightest parts with red Lead and White, the mean parts with red Lead alone, the deeper parts with Lake; and if need is, heighten it with white.

XI. *For a sad Green.* Mix Indico with Pink: for a light Green mix Pink and Masticot: for a Grass green mix Verdigrise and Pink.

XII. Remember always to lay yellows, blews, reds and greens, upon a white ground; for that only giveth them life.

## C H A P. VIII.

*Colours for Metals and precious stones.*

I. **F**OR *Iron*. Take Lamp black and white Lead; if you would have it rusty, take seacoal black, and mix it with a little white.

II. *For Silver*. Take Charcoal black and white Lead: where you would have it darkeſt, uſe more Charcoal; work ſilver ſomewhat ruſtiſh, and give it a ſudden glaſs with white Lead only.

III. *For Gold*. Take Lake, Umber, red Lead, Maſticot: lay the ground with red Lead, and a little dry Pink: where you would have it darkeſt, ſhadow it moſt with Umber; where lighteſt with Maſticot.

*Note, in grinding the red Lead for the gold ſize, put in a little Verdigrife to make it dry ſooner.*

IV. *For Pearls*. Temper Charcoal black with white Lead, till it be a perfect ruſſet; then make the Pearl with it, and give it a ſpeck of white Lead only to make it ſhine.

*Where note, that Ceruſe tempered with oyl of white Poppy is excellent to brighten up Pearls.*

V. *For precious ſtones*. For Rubies, &c. lay their counterfeit grounds with transparent colours; and Lake, Vedigrife and Verditer give them a ſhining colour.



C H A P. I X.

Of Colours for Landskip.

**I.** *FOR a light Green*, use pink and Masticot heightened with white: for a sad green, Indico and Pink heightened with masticot.

**II.** *For some Trees*, take Lake, Umber and white: for others charcoal and white: for others Umber, black and white, with some green: adding sometimes Lake or Vermilion, with other colours.

**III.** *For wood*, take lake, umber and white, mixing sometimes a little green withal.

**IV.** *For Fire*, lay red Lead and Vermilion tempered together where it is reddest: where it is blew, lay oyl, smalt, and white lead: where it is yellow, take masticot, and work it over in certain places: where you would have it shine most, with Vermilion.

**V.** *For an Azure skie*, which seems afar off, take oyl, smalt, or bice, and temper them with Linseed oyl. *But grind them not: for smalt or bice utterly lose their colour in grinding.*

**VI.** *For a red skie*, take Lake and White; and for Sun beams, or yellow clouds at Sun-rising or setting, take masticot and white.

**VII.** *For a Night skie*, or clouds in a storm, take Indico deepned with black, and heightened with white.

**VIII.** *For wood colours*. They are compounded either of Umber and white; Char-coal and white, Sea-coal and white; Umber black and white; or with some green added; to which you may adjoin sometimes, as in barks of trees, a little Lake or Vermilion.

**IX.** *Lastly, for the practical performing of the work* have recourse to the rules delivered in chap. 13. lib 1. and chap. 27. lib. 2.

## C H A P. X.

*Of the Painting of the Face.*

**I.** Have your necessary pencils in readines, as two pencils ducks quill fitched; and two ducks quill pointed; two goose quill fitched; and two pointed: two bristles both alike: one Swans quill fitched, and one pointed: one larger pencil in a tin case fitched; and a bristle of the same bigness; every one having a stick of about nine inches long put into the quill thereof, the farther end of which stick must be cut to a point.

**II.** The pencils in a readines in your left hand, with the pallet upon your thumb, prepared with fit colours; and your molfstick to rest upon; you must work according to the directions following.

**III.** The cloth being pinned, and strained upon the frame, take a knife, and with the edge thereof scrape over the cloath, lest knots or the like should trouble it.

**IV.** Then set the frame and cloth upon the Easel, at a convenient heighth, that sitting on a stool (even with the party you draw) you may have the face of the picture equal, or something higher than your own: set the Easel to the light (as in Limning we have taught) letting it come in upon your left hand, casting the light towards the right.

**V.** Let the person to be drawn, sit before you in the posture he intends to be painted in; about two yards distant from you.

**VI.** Then with a piece of painted chalk draw the proportion of the face upon the cloth, with the place of the eyes, nose, mouth, ears, hair, and other postures.

*Here is no difficulty in this, if you miss much, the colours*

*colours will bring all to rights again.*

VII. Then take a pencil Swans quill pointed, and begin to paint some of the lightest parts of the face with the lightest colour, (as the heightning of the forehead, nose, cheek-bone, of the lightest side:) the mean parts next (as the cheek-bone of the dark side, chin, and over the upper lip:) proceeding gradually till you come to the reddest parts of all.

VIII. Lay faint greenish shadows in convenient places; and where it is necessary to soften harsher shadows; but take heed of putting green where red should be.

IX. The faint or light parts thus done, take one of the Goose quill pointed, or Ducks quill fitched, and begin at the eyes to shadow with Lake, going over the nose, mouth, compass of the ear, &c. before you lay on any colour, wiping it lightly over with a linnen rag, to prevent the overcoming of the other colours.

X. The colours both light and dark being put in, take a great fitch pencil, and sweeten the colours therewith; by going over the shadows with a clean soft pencil, which being well handled will drive and intermix the colours one into another, that they will look as if they were all laid on at once, and not at divers times.

*Where note that the bigger pencils you use, the sweeter and better your work will lie.*

XI. *At the second sitting*, begin again with clean pencils, of such bigness as the work requires, and observe well the person, and see what defects you find in your work at first sitting, and amend them; then heighten or deepen the shadows as occasion requires.

XII. *Lastly*, take a Goose quill bristle, and put in the hair about the face (if there must be any) and rub in the greater hair, with the greater bristle; heightning it up with the Goose quill pencil.

## C H A P. XI.

*Of the cleansing of any old Painting.*

*For soap* I. **T**ake good Wood ashes, and searce them; or else some Smalt or powder blew, and with a Sponge and fair water gently wash the picture you would cleanse (taking great care of the shadows) which done, dry it very well with a clean cloth.

II. Then varnish it over again with some good varnish, but such as may be washed off again with water if need be.

*We shall hereafter shew the way of making varnish of several sorts; mean season this following may serve.*

III. Take either common varnish (made with Gumsack dissolved in Linseed oyl by boiling) or Glair of Eggs, and with your pencil go over the picture once, twice, or more therewith as need requires.

## C H A P. XII.

*The painting of the Antients exemplified first in some of their Heathen gods.*

I. **J**upiter, (their chief god) paint with long black curled hair, in a purple robe, trimmed with gold, and sitting on a golden throne, with bright yellow clouds dispersed about him.

II. *Apollo* or *Sol* (the god of Physick) with long, curled, yellow hair, crowned with a Laurel, in a purple robe, a silver bow, golden hair, and the throne of Emeralds.

III. *Mercury*, with long, yellow, curled hair, in a  
coat



coat of flame colour, with a mantle purely white, trimmed with gold and silver; his beaver white with white feathers, his shoes golden, his rod silver.

IV. *Neptune*, with long, hoary hair, in a blew or sea green mantle, trimmed with silver, riding in a blew chariot, or on a Dolphin, of a brown black colour, with a silver trident in his right hand.

V. *Pluto*, with long, curled, black hair, in a robe of cloth of gold.

VI. *Bacchus*, with short, brown, curled hair, with a Leopards skin spotted, or in a green mantle; a tawny face, with a wreath of Vine branches.

VII. *Hymen*, with long yellow hair, in a purple or saffron coloured mantle.

VIII. *Vulcan*, paint in a scarlet robe.

IX. *Triton* (*Neptune's Trumpeter*) with a blew skin, and in a purple mantle.

X. *Cupid* was painted by *Zeuxis* (*that famous Painter of Greece*) in a green robe.

XI. *Minos* (*one of the Judges of Hell*) with hair long, brown, and curled; crowned with a golden crown; his robe blew and silver, his buskins of gold.

XII. *Momus* (*the carping god*) with a darkish robe, his beard and hair party-coloured,

## C H A P. XIII.

*Of the painting of some of the Heathen goddesses.*

I. *Junno, Queen of the goddesses*, with black hair and eyes, adorned with a sky-coloured mantle, or pied; wrought with gold and peacocks eyes; like the orient circles in the peacocks trains.

II. *Diana, the goddess of chastity*, with yellow hair; a grass green mantle, trimmed with silver; buskins silver; bow golden; quiver painted colours.

III. *Pallas, the goddess of wisdom*, with a blew mantle imbroidered with silver.

IV. *Venus, the goddess of love and beauty*, with gold yellow hair, attired with black; a scarlet (or else dun-coloured) robe.

V. *Ceres, the goddess of Corn and plenty*, with yellow hair, and a straw-coloured mantle trimmed with silver.

VI. *Tellus, the goddess of the earth*, in a green mantle.

VII. *Urania*, in a mantle of azure, filled with Lamps.

VIII. *Aurora*, in a purple robe, in a blew mantle fringed with silver.

IX. *Proserpine, Queen of Hell*, in a black mantle trimmed with gold flames.

X. *Vesta, the daughter of Saturn*, in white garments filled with flames.

XI. *Astrea, the goddess of justice*, in a crimson mantle, trimmed with silver.

XII. *Flora*,

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XII. *Flora, the goddess of flowers, in a mantle of divers colours.*

XIII. *Night, in a black mantle spotted with stars of gold.*

XIV. *The Graces were always alike in silver robes, like sisters.*

*Eccho, the goddess of the air, and daughter of speech, the entirely beloved of Pan, is an invisible goddess.*

*Ausonius Gallus reporteth that she hath oftentimes dissuaded and reprehended such who would undertake to depict her, and repeats the same in an Epigram, whose sense in English is this.*

*Surcease thou meddling Artist thy endeavour,  
Who for thy skill hast reap'd such long-liv'd fame:  
Strive not to paint my bodys shape, for never  
Did any humane eyes behold the same.  
In concave caverns of the earth I dwell,  
Daughter of th' air, and of each tatling voice,  
In woods and hollow dales I build my Cell,  
Joying to re-report the least heard noise,  
To grief-opprest, and men disconsolate,  
That tell each grove their Souls vexation,  
Their dying agonies I aggravate  
By their dole accents iteration.  
And he that will describe my form aright,  
Must shape a formless sound, or airy sprite.*

## C H A P. XIV.

*The Painting of Law-givers, Emperours and Kings, and Queens.*

I. **M**oses, the Hebrew Law-giver, with bright hair; a very beautiful visage, with radiant scintillations about his head, in form of hoariness, which in painting is called Glory.

II. *Numa Pompilius*, with white hair, crowned with a silver bend or Diadem; his robe Crimson trimmed with Gold; his mantle yellow trimmed with Silver; his buskins watchet and Silver.

III. *Aeneas*, the Trojane Prince, in a purple mantle trimmed with Gold.

IV. *David*, the King of *Israel*, with brown hair and a ruddy complexion.

V. *Alexander Magnus*, with brown hair and a ruddy complexion.

VI. *Roman Emperors*, with yellow Caruffers embroidered with silver; the labels of their sleeves, and short bases of watchet; the under sleeves and long stockings, white; a Lawrel wreath, with a silver jewel before, and rayes of gold issueing from the wreath.

VII. *German Emperors*, with a violet coloured robe, watchet or light coloured.

VIII. *Mahomet*; the Turks great Prophet, in garments all of green.

IX. *Gustavus Adolphus*, King of *Sweden*, with yellow hair.

X. *Dido*, Queen of *Carthage*, in a purple or Scarlet mantle; her under garments Purple; a Golden quiver; her



her hair yellow, tyed up with Spangs and Knots of Gold.

XI. *Elizabeth*, Queen of *England*, pale faced, light brown hair, and gray-eyed.

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C H A P. X V.

*The Painting of Philosophers, and  
the Sybills.*

I. **P** *Thagoras*, in white garments with a Crown of Gold.

*Empedocles*, in Violet, Murry, or Purple, and so the rest of the *Grecian* Philosophers.

III. *Erasmus Roterdamus*, yellow haired, gray-eyed, and somewhat pale.

IV. *Beza* is painted with white hair.

V. *Sibilla Agrippa*, a woman in years in a roseal garment.

VI. *Sibilla Libica* an elderly woman, crowned with a garland of flowers, in purple garments.

VII. *Sibilla Delpica*, with a black garment, a young woman with a horn in her hand.

VIII. *Sibilla Phrygia*, in red garments, having an old Saturnian hard favoured face.

IX. *Sibilla Herophila*, a young woman very fair in a purple garment, and head covered with a vail of Lawn.

*Sibilla Europea*, a comely young woman, having a high, red-coloured face, a fine vail on her head, and clad in a garment of Gold work.

XI. *Sibilla Persica*, with a white vail, and a golden garment.

XII. Si-

XII. *Sibilla Samia*, a middle aged woman, clothed in Willow weeds, having a palm in her hand.

XIII. *Sibilla Hellepontica*, a young woman in green garments, with a round, lovely, fresh coloured face; holding in her left hand a Book; and in her right hand a Pen.

XIV. *Sibilla Tiburtina*, an old woman in purple garments, of a hard visage, holding in her Apron the books of the Sibills.

*These Sibills for their Prophecies of Christ are in high esteem: they are ten in number as Varro saith; yet others make twelve, of which we are not satisfied; Boysardus in his Treatise of divination, besides these ten addeth two others, Epirotica and Egyptia. Some, as Martianus, will have but two; Pliny and Solinus, but three; Ælian four; and Salmasius but the first seven. They are generally described as young women, yet some were old, as she that sold the books unto Tarquin, from whence we conclude the Licentia pictoria is very large.*

## CHAP. XVI.

### *The Painting of Arts, Vertues, and Passions:*

I. **A** *Rithmetick* is painted in cloth of Gold: *Geometry*, fallow faced, a green mantle fringed with silver, and a silver wand in her right hand: *Astronomy* with a silver Cressant on her fore-head, an azure mantle, a watchet Scarf, with golden Stars.

II. *Faith* is painted in white garments, with a cup of Gold: *Hope* in blew, with a silver Anchor: *Charity* in yellow robes; on her head a tyre of Gold with precious stones; her chair Ivory.

III. *Re-*

III. *Religion* in a silver vail, with a mantle or garment of white: *Justice* in a white robe, and a white mantle; with a Coronet of silver and white buskins: *Innocency* in White wholly.

IV. *Concord* in a sky coloured robe; and a yellow mantle; *Peace* in white, scattered with stars, or a carnation mantle fringed with Gold, a vail of silver, green buskins, and a palm in her hand in black: *Unanimity* in a blew robe, mantle and buskins, with a chaplet of blew Lillies.

V. *Wisdom* in a white robe, blew mantle, seeded with stars: *Law* in purple robes, seeded with gold stars, a mantle of Carnation fringed with gold; purple and yellow buskins: *Government* in Amour.

VI. *Watchfulness* in a yellow robe; a Sable mantle fringed with silver, and seeded with waking eyes; a chaplet of turnsole; in her right hand a lamp; in her left a bell: *Confidence* in a party coloured garment: *Modesty* in blew.

VII. *Eternity* in blew, seeded with Golden stars: *The Soul* in white garments, branched with gold and pearl, and crowned with a garland of Roses: *Felicity* in purple trimmed with silver.

VIII. *Love*, in Crimson fringed with gold, a flame coloured Mantle, a chaplet of red and white Roses: *Natural affection* in Citron colour: *Envy* in a discoloured green garment full of eyes.

IX. *Joy* in a green robe, and a mantle of divers colours, embroidered with flowers; a garland of Myrtle; in her right hand a Crystal Cruise; in her left, a golden Cup: *Pleasure* in light garments, trimmed with silver and gold: *Laughter* in several Colours.

X. *Wis*, in a discoloured mantle: *Jollity*, in flame colour: *Pastime*, in purple trimmed with gold.

XI. *Opinion*, in black Velvet, black cap, with a white

white fall : *Impudence* in a party coloured garment :  
*Audacity* in bluish colour.

XII. *Honour* in a purple robe wrought with gold :  
*Liberty* in white : *Safety* in Carnation

## CHAP. XVII.

### *Of Colours for Painting Glass.*

**I. Yellow.** Take a very thin piece of pure fine silver, and dip it into melted brimstone; take it out with a pair of plyers, and light it in the fire, holding it, till it leaves burning; then beat it to powder in a brasen mortar; then grind it with Gum Arabick water, and a little yellow Oker.

**II. Yellow.** Take fine silver one Drachm, Antimony in powder two drachms, put them in a hot fire, in a crucible for half an hour, and then cast it into a brasen mortar, and beat it into powder, to which add yellow Oker six Drachms, old earth of rusty Iron seven Drachms, grind all well together.

*This is fairer than the former.*

**III. White.** This is the colour of the glass it self: you may diaper upon it with other glass or Crystal ground to powder.

**IV. Black.** Take Jet and Scales of Iron, and with a wet feather take up the Scales that fly from the Iron, after the Smith hath taken his heat, grind them with gum water.

**V. Black.** Take Iron scales, Copper scales of each one Drachm, heat them red hot in a clean fire shovel; then take Jet half a Drachm, first grind them small and temper them with gum water.

VI. Red



VI. *Red.* Take *Sanguis Draconis* in powder, put to it rectified spirit of wine; cover it close a little while, and it will grow tender; wring it out into a pot, that the dross may remain in the cloth; the clear preserve for use. This is a fair red.

VII. *Carnation.* Take tin glafs one ounce; jet three ounces: red oker five ounces: gum two drachms, grind them together. It is a fair Carnation.

VIII. *Carnation.* Take jet four Drachms: tin glafs or litharge of silver two Drachms: gum, and scales of Iron of each one Drachm, red chalk one ounce, grind them.

IX. *Green.* Take Verdigrise and grind it well with Turpentine; and put it into a pot; warming it at the fire, when you use it.

X. *Blew.* Provide the clearest leads you can get of that colour, beat them to powder in a brazen mortar; take Goldsmiths Amel of the same colour, clear and transparent, grind each by it self, take two parts of lead, and one of Amel, grind them together as you did the silver. *The same understand of Red and Green:*

CHAP. XVIII.

Of the way of Painting upon Glafs:

I. There are two manner of ways of painting upon glafs; the one is for oyl-colour, the other for such colours, as are afterwards to be annealed or burnt on.

II. To lay oyl colours upon glafs, you must first grind them with Gum water once, and afterwards temper it with Spanish Turpentine, lay it on and let it dry by the fire, and it is finished.

III. To anneal or burn your glass, to make the colours abide, you must make a four square brick furnace, eighteen inches broad and deep; lay five or six cross Iron bars on the top of it, and raise the furnace eighteen inches above the bars: then laying a plate of Iron over the bars, sift (through a sieve) a lay of slack'd lime over the plate, upon which lay a row of glass; upon that a bed of lime, and upon that lime, another row of glass; thus continue *stratum super stratum*, till the furnace is full.

IV. Lay also with every bed of glass a piece of glass, which you may wipe over with any Colour (these are called watches;) and when you think your glass is burnt enough, with a pair of plyers take out the first and lowest watch, and lay it on a board, and being cold, try if you can scrape off the Colour, if it hold fast on, take out that row; always letting it abide the fire till the colour will not scrape off.

## C H A P. XIX.

### *Of Washing, and the Materials thereof.*

I. BY washing, here we intend nothing else, but either to set out Maps or Printed Pictures in proper Colours, or else to varnish them.

II. The Instruments and materials of washing are chiefly six, to wit, 1. *Alom-water*, 2. *Size*, 3. *Liquid Gold*, 4. *Pencils*, 5. *Colours*, 6. *Varnish*.

III. *To make Alom water*. Take Alom eight ounces, fair water a quart, boil them till the Alom is dissolved.

IV. *To make size*. Take glew, which steep all night  
in

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in water, then melt it over the fire, to see that it be neither too strong nor too weak: then let a little of it cool; if it be too stiff when it is cold, put more water to it, if too weak more glew, using it lukewarm.

V. *Liquid Gold.* It is exactly made by the first Section of the 21 Chapter of the second Book.

VI. *Pencils* are to be of all sorts both fitch'd and pointed; as also a large pencil brush to past Maps upon Cloth; another to wet the paper with Alom water; a third to starch the face of the picture withal before it be coloured; and a fourth to varnish withal.

VII. The colours are the same with those which we mentioned in *Chap. 17. lib. 2.* to which add, 1. *Of Black*, Printers black, Franckford black, 2. *Of Red*, Vermilion, Rosset, 3. *Of Blew*, Verditure, Litmos, Flory, 4. *Of Yellow*, Cambogia, Yellow berries, Orpiment, 5. *Brazil*, Logwood (ground) and Turnsole, Cochinele, Madder.

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C H A P. XX.

*Of Colours simple for Washing.*

I. *Printers black.* Vermilion, Rosset, Verditure, and Orpiment are to be ground, as we have taught at the fifth Section of the 22 Chapter of the second Book.

II. *Brazil.* To some ground Brazil put small Beer and Vinegar, of each a sufficient quantity, let it boil gently a good while, then put therein Alom in powder to heighten the Colour, and some gum Arabick to bind it; boil it till it taste strong on the tongue, and make a good red.

III. *Logwood.* Ground Logwood boiled as Brazil, makes

makes a very fair transparent Purple Colour.

IV. *Cochenele*. Steeped as Brazil was boiled, makes a fair transparent purple: as thus, take Cochinele and put it into the strongest Sope lees to steep, and it will be a fair purple, which you may lighten or deepen at pleasure.

V. *Madder*. Take Madder four drachms, ground Brazil one ounce, Rain water a quart; boil away a third part: then add Alom half an ounce, boil it to a pint; then gum Arabick one ounce, which boil till it is dissolved, cool it stirring it often, and strain it for use. It is a good scarlet die for Leather.

VI. *Verdigriese*. Take Verdigrise ground finely one ounce, put to it a good quantity of common varnish, and so much oyl of Turpentine, as will make it thin enough to work withal; it is a good green. And Verdigrise, Alom, of each one Drachm, Logwood three Drachms, boiled in Vinegar, make a good Murry.

VII. *Gambogia*. Dissolve it in fair spring water, and it will make a beautiful and transparent yellow: if you would have it stronger, dissolve some Alom therein: it is good for Silk, Linnen, white Leather, Parchment, Vellom, Paper, Quills, &c.

VIII. *To make Verdigrise and Ceruse according to Glauber.*

These colours are made with Vinegar in earthen pots set into hot horse dung: but if you dissolve your Venus or Saturn with spirit of Nitre, and precipitate your Venus with a lye made of Salt of Tartar, and your Saturn with Salt water, edulcorating and drying them; the Venus will yield an excellent Verdigrise, which will not corrode other colours as the common Verdigrise doth; and the Saturn yields a Ceruse whiter and purer than the ordinary: much better for Painting or Chirurgery.

IX. *Yel-*



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IX. *Yellow Fustick berry.* Boil it in water or steep them in Alom water, it makes a good yellow for the same purpose.

X. *Turnsole.* Put it into sharp Vinegar over a gentle fire, till the Vinegar boil, and is coloured; then take out the Turnsole and squeeze it into the Vinegar, in which dissolve a little gum Arabick; it shadows very well on a Carnation or yellow.

XI. *Litmos.* Cut it into small pieces, and steep it a day or two in weak gum Lake water, and you will have a pure blew water to wash with.

XII. *Flory Blew.* Grind it with Glair of Eggs, if then you add a little Rosset it makes a light Violet Blew; mixed with White and Red Lead, it makes a Crane feather Colour.

XIII. *Saffron* Steeped in Vinegar and mixed with gum water is a good Yellow.

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C H A P. XXI.

*Of Compounded Colours for Washing.*

**O** *Range Colour.* Red Lead and Yellow berries make a good Orange Colour: or thus, take Arnott's half an ounce, Pot ashes one Drachm, water one pound, boil it half away, then strain it, and use it hot.

*It is good for white leather, paper, vellum, quills, parchment, &c.*

II. *Green.* Take distilled vinegar, filings of Copper, digest till the vinegar is blew, which let stand in the Sun or a slow fire till it is thick enough, and it will be a good green.

Or thus. Take Cedar green (which is best of all) or instead thereof green Bice, steep it in Vinegar, and strain it; then grind it well with fair water, and put to it a little honey, and dry it well; when you use it, mix it with gum water.

III. To make fine Indico.

Take the blossoms of Wode three ounces, Amylum one ounce, grind them with Urine and strong vinegar, of which make a Cake, then dry it in the Sun and so keep it for use.

IV. A Blew to wash upon paper.

Take of the best azure an ounce, Kermes two ounces, mix them, which temper with clear gum water, and it will be a glorious Colour.

V. To make a Venice Blew.

Take quick lime, make it into past with strong vinegar, half an hour after put thereto more vinegar to soften it; then add Indico in fine powder one ounce, mix them and digest it in horse dung for thirty or forty days.

VI. Another excellent Blew.

Mix fine white Chalk with juice of elder berries full ripe, to which put a little Alom water.

VII. To make blew Smalt.

Take fluxible sand, Sal Nitre and Cobalt, mix them together.

VIII. A lively yellow.

Dissolve orpiment in gum water, to which put a little ground Vermilion; grind them together and you shall have a very lively colour.

IX. A light green. Take Juice of Rew, Verdigrise, and Saffron, grind them well together and use them with gum water.

Or thus; Take sap green, flower de bice, or tawny green, which steep in water: Verdigre and Cernise mixt  
with

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*with a little copper green, make a good light colour.*

X. *Blew.* Ultramine, blew bice, smalt, and Verditure, ground singly with gum water, or together, make a good blew.

XI. *Brown.* Ceruse, red lead, English Oker, and pink, make a good brown.

XII. *Spanish Brown.* To colour any horse, dog, or the like, you must not calcine it; (yet not calcined it is a dirty colour :) but to shadow Vermilion, or lay upon any dark ground, behind a picture, to shade berries in the darkest places, or to colour wooden posts, wainscot, bodies of trees and the like, it is very good (being burnt.)

XIII. *Flesh colour.* Mix white, Indian lake, and red lead (according as you would have it light or deep;) and to distinguish a mans flesh from a womans, mingle with it a little Oker.

XIV. *Colours of Stones.* Verdigrise with Varnish makes an Emerald : with Florence lake a Ruby : with Ultramarine a Saphyr.

XV. *A never fading green.*

Take juice of flowers of Flowerdeluce, put it into Gum water and dry it in the Sun.

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C H A P. XXII.

*Of mixing Colours and shadowing.*

I. **I**N mixing be careful not to make the colour too sad, nor take the pencils out of one colour and put them into another.

II. In mixing colours, stir them well about the water severally till they are well mixed; then put them together, making the colour sadder or lighter at pleasure.

III. *Green* is shadowed with Indico and yellow berries.

IV. *Blew* is shadowed with Indico, Litmose and flo-ry; or any of them being steeped in lees of Soap ashes, and used with gum water.

V. *Garments* are shadowed with their own proper colours: or you may mingle the colour with white (for the light) and shadow it with the same colour unmingled: or you may take the thinnest of the colour for the light, and shadow with the thickest or bottom of the same.

VI. *Sap green* is only used to shadow other greens with, and not to be laid for a ground in any garment.

VII. *Lake* ought not to be shaded with any colour, for it is a dark red; but for variety you may shadow it with Bice, or blew Verditure, which will make it like changeable Taffata.

VIII. The shadow for *Yellow Berries* is Umber; but for beauties sake with red Lead, and the darkest touches with Spanish brown; and for variety with Copper green, blew Bice or Verditure.

IX. *White* sets off *blews* and *blacks* very well: *Red* sets off well with *yellows*: *Yellow* with *reds*, *fad blews*, *browns*, *greens*, and *purples*.

X. *Blew* sets off well with *yellows*, *reds*, *whites*, *browns*, and *blacks*: and *Green* sets off well with *purples*, and *reds*.



CH A P. XXIII.

Of Colours for Landskips.

I. **G**reen mixed with white, pink, bice, massicot, smalt, indico, or ceruse; or blew verditure mixt with a few yellow berries makes a good green for Landskips.

II. For the *saddest hills* use umber burnt; for the *lightest places*, put yellow to the burnt umber: for *other hills* lay copper green thickened on the fire, or in the Sun: for the next *hills further off*, mix yellow berries with copper green; let the fourth part be done with green verditure; and the *farthest and faintest places* with blew bice; or blew verditure mingled with white, and shadowed with blew verditure, in the shadows indifferently thick.

III. Let the *high-ways* be done with red and white lead, and for variety yellow oker; shadow it with burnt umber, which you may use for sandy rocks and hills.

IV. *Rocks* may be done with several colours, in some places black and white, in other places red and white, and in others blew and white, and the like, as you see convenient.

V. *The water* must be black verditure and white, shadowed with green and blew verditure: when the *banks* cast a green shadow upon the water, and the water is dark shadowed, then shade it with indico, green thickened, and blew verditure.

VI. Colour *buildings* with as much variety of pleasant colours as may be imaginable, yet let reason be your rule in mixing your colours: you may sometimes use

use white and black for the *wall, conduits* or other things: for *Brick-houses* and the like, red lead and white: if *many houses* stand together, set them off with variety of colours, as umber and white; lake and white; red lead and white, and the like.

VII. Lastly, for the *sky*, use masticot or yellow berries, and white for the *lowest and lightest* places; red roset and white for the *next degree*; blew bice and white for the *other*; blew bice, or blew verditure for the *bighest*.

*These degrees and colours must be so wrought together, that the edge of each colour may not receive any sharpness; that is, so as that you cannot perceive where you began to lay them, being so drowned one in another.*

## CHAP. XXIV.

### *Of the practice of Washing.*

**I.** **W**ith the *Alom-water* wet over the pictures to be coloured, for that keeps the colours from sinking into the paper, and will add a lustre unto them, make them shew fairer, and keep them from fading.

II. Then let the paper dry of it self (being washed with *Alom-water*) before you lay on the colours; or before you wet it again, for some paper will need wetting four or five times.

III. The washing of the paper with the *Alom-water* must be done with a large pencil brush, such as we have advised to at the sixth Section of the nineteenth Chapter of this Book.

IV. But if you intend to *varnish* your pictures after you have coloured them; instead of washing them with *Alom water*, first size them with new size, made of good white starch, with a very fine brush; and this you

you must be sure to do all over, for else the varnish will sink through.

V. Having thus prepared your work, go to laying on your Colours according to the former directions, suiting them, as near as may be, to the life of everything.

VI. The picture being painted, you may with size ( at the fourth Section of the nineteenth Chapter of this Book ) paste your maps or pictures upon cloth, thus: wet the sheet of cloth therein, wring it out, and strain it upon a frame, or nail it upon a wall or board, and so paste your maps or pictures thereon.

VII. Lastly, if the picture be to be *varnished*, having thus fixed it into its proper frame, then varnish it with a proper *varnish* ( by the following rules ) and the work will be fully finished.

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C H A P. XXV.

*Of the making of Varnishes.*

I. *Varnish for painting in Oyl.*

Take Mastich two ounces, Oyl of Turpentine one ounce; put the Mastich in powder into the Oyl, and melt it over the fire, letting it boil little or nothing (lest it be clammy;) when it is enough, you may know by putting in a hens feather, for then it will burn it.

II. *Varnish for painted pictures.*

Take white Rozin one pound, Plumb-tree gum ( or gum Arabick ) Venice Turpentine, Linseed oyl, of each two ounces; first melt the Rozin and strain it very hot; steep the Gum in oyl Olive ( oyl ben is better ) till it is dissolved, and strain it, to which put the Turpentine and Rozin, and over a slow fire mingle them till they

they are well dissolved. When you use it, use it hot.

III. Another for the same.

Take Olibanum and gum Sandrack in powder, which mingle with Venice Turpentine, melting and incorporating them still over a gentle fire; then strain it hot.

*When you use it let it be hot, and your Varnish will shine well; it dries immediately.*

IV. Another for the same.

Take oyl of Linseed, which distill in a glass Retort, one ounce, fair Amber dissolved three ounces, mix them over a slow fire, and it is done.

V. A very good Varnish for Gold, Silver, Brass, Iron, Stone, Wood, Vellum or Paper.

Take Benjamin (made into fine powder between two papers) put it into a vial, and cover it with Spirit of Wine four fingers above it, and let it stand three or four days, then strain it, and it will be bright and shining, drying immediately, and retaining its brightness many years.

*If you varnish Gold, or any thing gilded, before the straining you should put in a few blades of Saffron for colour sake: but if Silver or any thing white, you ought to use the white part of the Benjamin only.*

VI. A varnish particularly for Gold, Silver, Tin, or Copper.

Take Linseed oyl six ounces, Mastich, Aloes Epatick of each one ounce; put the gums in powder into the Oyl, into a glazed earthen pot, which cover with another, luting them together, in the bottom of which, let be a hole, whereinto put a small stick with a broad end to stir withal; cover them all over with clay, (except the hole) set it over the fire, and stir it as often as it seetheth for a little while, then strain it for use. First let the metal be polished, then strike it over with this varnish.

VII. A



VII. A Varnish for Wood and Leather.

Take Tincture of Saffron or Turmerick in Spirit of Wine a pint, prepared gum Lake a sufficient quantity, dissolve the gum in the tincture and it is done.

*This is a Varnish of great use to lay over Gold and Silver or any thing which is exposed to the Air.*

VIII. To make the Common Varnish.

Take spirit of Wine a quart, Rozin one ounce, Gum Lake a sufficient quantity, dissolve the gums in a gentle heat (being close covered) and let them settle: then gently decant off the clear, which keep in a close glass Bottle for use.

*The thick which remains, you may strain through a cloth, and keep for other purposes.*

IX. To make a red Varnish.

Take spirit of Wine a quart, gum Lake four ounces, Sanguis Draconis in fine powder eight ounces, Cochenile one ounce, digest a week over a gentle heat, then strain it for use.

X. To make a yellow Varnish.

Take spirit of Wine a pint, in which infuse (three or four days) Saffron half an ounce, then strain it, and add Aloes Succotrina one ounce, Sanguis Draconis two ounces, which digest a week over a gentle heat close covered, then strain it for use.

XI. An Universal Varnish, the best of all others.

Take good gum Sandrick (but gum Anime is better) dissolve it in the highest rectified spirit of Wine (an ounce and a half more or less to a pint) and it is done.

*Where note 1. That unless the Spirits be highly rectified, the Varnish cannot be good. 2. That some put into it Linseed oyl (which is naught; oyl of ben is better) and mix them together. 3. Some mix boiled Turpentine with it; others Chymical oyls of deep colours (as of Cloves, Mace, Nutmegs,*

megs, Caraways, Cinnamon ) according to the intent. 4.  
That it ought to be kept in a glass bottle close stopped, lest it  
curdle, and the gums separate.

## CHAP. XXVI.

### *Of the manner of Varnishing.*

**I.** **T**He intent of Varnishing is either to preserve the gloss of paintings or pictures, or else to represent and imitate the forms of shining and perlucid bodies.

**II.** To varnish paintings and pictures, 'tis no more but with a pencil dipt in the Varnish to go over the same, then letting it dry; and so going over it so often as in reason you shall see convenient.

**III.** If you are to imitate any thing, as Marble, Tortoise shell, Amber, *Lapis Lazuli* or the like; you must first make the imitation of them, upon that which you would Varnish, with their proper colours, as in Limning or Painting with oyl; which must be thoroughly dry: then by the second Section go over all with the Varnish, so often till you see it thick enough; letting it dry every time leisurely. *For example sake;*

**IV.** *To imitate Marble.*

Take of the Universal *Varnish* at the eleventh Section of the five and twentieth Chapter, with which mingle Lamp black ( or other black ) and white Lead finely beaten, and with a brush pencil, marble the thing you would *Varnish* according to your fancy; lastly, being dry strike it again two or three times over with the clear *varnish* alone, and it will be perfect.

**V.** *To imitate Tortoise shell.*

First lay a white ground, then with convenient colours (as Vermilion with Auripigment) duly mixt with Common Varnish, streak and shadow the white ground with any wild fancy (as nearly imitating Tortoise shell as you can) which being dry, strike it here and there with the red *Varnish* (mixed with a little Sinaper or Indian Lake) then up and down the work as nature requires touch it with varnish mixed with any good black; then stroke it over with Universal *Varnish* four or five times, letting it dry every time; lastly, let it dry well a week, and with Pumice stone (in fine powder) and a wet cloth polish it by rubbing; then go over it again three or four times with the Universal *Varnish*, and (if need require) polish it again with fine putty as before; after which you may once again strike it over with the said Varnish, and it will be done.

VI. *To imitate Tortoise shell upon silver or gold.*

A white ground being laid, and smeared over with Vermilion or the like; lay over the same leaves of silver or gold (as we have taught in other places) either with gum Ammoniacum, Lake, common *varnish* or glair; this done, and being dried, shadow it according to reason; striking it over here and there with yellow *varnish*, and with the yellow *varnish* mixed with a little red *varnish*; (all things being done in imitation of the shell) strike it several times over with the Universal *Varnish*, and polish it (in all respects) as before.

VII. *To imitate Lapis Lazuli.*

Upon a ground of white Lead, Spodium or the like in common Varnish (being first dry) lay *Ultramarine* or some other pure *blew* well mixed with the Universal Varnish, so as that the ground may not appear: then with wild, irregular streaks (in resemblance of Nature)

with

with liquid or shell gold, run straglingly all over the blew, adding very small specks upon the blew part, of such various colours, as are usually to be seen upon the stone.

## CHAP. XXVII.

### *Experimental Observations of Vegetable Colours in General.*

I. **A** Strong infusion of galls filtered; mixed with a strong and clear solution of Vitriol, makes a mixture as *black as Ink*: which with a little strong oyl of Vitriol is made *transparent* again: after which the *black* colour is regained again, by the affusion of a little quantity of a strong solution of salt of Tartar.

*The first black (although pale in writing, yet) being dry, appears to be good Ink.*

II. Decoction of dried red roses, in fair water, mixed with a little filtrated solution of blew vitriol made a black colour: this mixed with a little *Aqua fortis*, turn'd it from a black, to a deep red; which by affusion of a little spirit of Urine, may be reduced straight to a thick and *black colour*.

III. *Yellow wax* is whitened by dissolving it over the fire in spirit of wine, letting it boil a little, and then exhaling the spirit of wine; or else whilst it is hot, separating it by filtration.

IV. Fair water mixed with a blood red Tincture of *Benjamin* drawn with spirit of wine, immediately makes it of a milk white colour.

V. *Blackness* may be taken away with oyl of Vitriol; so black pieces of silk or hair I have turn'd to a kind of yellow.

VI. A



VI. A handful of *Lignum Nephturicum* rasped, infused in four pound of spring water, yields between the light and the eye an almost golden colour ( unless the Infusion be too strong ) but with the eye between the light and it ( in a clear vial ) a lovely blew as indeed it is : this with spirit of Vinegar may be made to vanish ( still keeping its golden colour ) and after with oyl of Tartar *per deliquium* may be restored again.

VII. Cloths died with blew and Woad, is by the yellow decoction of *Luteola* died into a green.

VIII. Syrup of Violets mixed with a high solution of Gold in *Aqua regia*, produces a reddish mixture; and with a high solution of filings of Copper in spirit of Urine, a lovely fair green.

IX. Syrup of Violets mixed with a little juice of Lemons, spirit of Salt, vinegar, or the like acid salt, will be immediately red; but mixt with oyl of Tartar, or a solution of pot ashes, it will in a moment be perfect green: the like in juice of blew bottles.

X. A good quantity of oyl of Tartar, put into a strong solution of Verdigrise, gives a delightful blew; which may be variously changed by adding spirit of Urine, or hartshorn.

XI. Although red roses hung over the fume of Sulphur, lose all their redness, and become white: yet oyl of Sulphur ( which is nothing but the fumes condensed ) doth wonderfully heighten the tincture of the same.

XII. *Cochenele* will have its colour far more heightened by Spirit of Urine, than by rectified spirit of wine: And one grain of *Cochenele* in a good quantity of spirit of Urine, being put into one hundred twenty six ounces of water, tinged it ( although but faintly: ) which amounts to above one hundred twenty five thousand times its own weight.

XIII. Twenty

XIII. Twenty grains of *Cochenele* being mixed with an ounce of *Saccharum Saturni*, makes a most glorious purple colour: and so accordingly as the quantity is either diminished or encreased, so the purple colour shall be either lighter or deeper.

XIV. A few Grains of *Cochenele* being mixed with the *Lixivium* of Quicklime in a due proportion, makes a fading purple colour, of the greatest glory imaginable in the world.

XV. The juice of privet berries with spirit of salt, is turned into a lovely red: but with a strong solution of pot ashes into a delightful green.

XVI. Upon things red by nature, as syrup of Clove-gilliflowers, juice of Buckthorn berries infusion, of red roses, Brazil, &c. Spirit of Salt makes no considerable change, but rather a lighter red: but other salts turn them into a greenish; especially juice of buckthorn berries.

XVII. Juice of *Jasmin* and snow drops, by a strong *alcalizate* solution, was (although of no colour) turned into a deep greenish yellow.

XVIII. *Buckthorn berries* being gathered green and dried, are called *sap-berries*, which being infused in *Alom water* gives a fair yellow (which is used by Bookbinders for the edges of their books, and to colour leather also: ) being gathered when they are black, they are called *sap green*, and make a green colour being put into a brass or copper vessel for three or four days; or a little heated upon the fire, and mixed with *Alom* in powder, and pressed forth; so put into bladders, hanging it up till it is dry: And being gathered about the end of *November*, (when they are ready to drop) they yield a purplish colour.

XIX. Tincture of *Cochenele*, diluted never so much with fair water, will never yield a yellow colour: a single

single drop of a deep solution in spirit of Urine, diluted in an ounce of fair water, makes a fair pink, or carnation.

XX. Oyl or spirit of Turpentine, digested with pure white Sugar of lead, yields in a short time a high red tincture, which Chymists call *Balsamum Saturni*.

XXI. Spirit of Salt dropt into a strong infusion of *Cochenele* or juice of black cherries, makes immediately a fair red: but dropt into the Infusion of Brazil, a kind of yellow: so the filtrated tincture of *Balaustins* mixed with good spirit of Urine, or the like, turns of a darkish green; but with spirit of salt, a high redness, like rich Claret wine; which glorious colour may in a moment be destroyed, and turned into a dirty green, by spirit of Urine.

XXII. A high Infusion of *Lignum Nepriticum*, mixed with spirit of Urine, gives so deep a blew, as to make the liquor opacous: which after a day or two vanishes, and leaves the liquor of a bright amber colour.

Where note that instead of Spirit of Urine you may use oil of Tartar, or a strong solution of pot ashes.

XXIII. Infusion of Logwood in fair water (mixt with spirit of *Sal Armoniack*) straight turns into a deep, rich, lovely purple; two or three drops to a spoonful is enough, lest the colour be so deep, as to be opacous.

XXIV. Spirit of *Sal Armoniack* will turn syrup of Violets to a lovely green.

XXV. Infusion of *Litmoſs* in fair water, gives in a clear glass a purple colour: but by addition of spirit of Salt, it will be wholly changed into a glorious yellow.

XXVI. The Infusions and juices of several plants, will be much altered by a solution of Lead in spirit of Vinegar: it will turn infusion of red rose leaves into a sad green.

XXVII. So Tincture of red roses in fair water, would be turned into a thick green, with the solution of Minium in spirit of Vinegar; and then with the addition of oyl of Vitriol the resolved Lead would precipitate white, leaving the liquor of a clear, high red colour again.

XXVIII. We have not yet found, that to exhibit strong variety of colours, there need be employed any more than these five, White, Black, Red, Blew, Yellow: for these being variously compounded and decomposed exhibit a variety and number of colours; such as those who are strangers to painting can hardly imagine.

XXIX. So Black and White variously mixed, make a vast company of light and deep Grays: Blew and Yellow, many Greens: Red and Yellow, Orange-tinies: Red and White, Carnations: Red and Blew, Purples, &c. producing many colours for which we want names.

XXX. Acid salts destroy a blew Colour: Sulphurous, Urinous or fixed restore it.

XXXI. Acid and Alcalizate salts, with many bodies that abound with Sulphureous or oily parts will produce a red, as is manifest in the Tincture of Sulphur, made with Lixiviums of Calcined Tartar or pot ashes.

XXXII. Lastly, it may be worth tryal (since it hath succeeded in some experiments) so to take away the colour of a Liquor, as that it may be coloured: which in what we have tryed, was thus: first by putting into the Tincture, Liquor, or juice, a quantity of the solution of pot ashes or oyl of Tartar per deliquium; and then adding a good or strong solution of Alom, which in our observations precipitated the tinging matter, or gathered it into one body (like as it were curds) and so left the Liquor transparent and clear as Crystal.



C H A P. XXII.

*General Experimental observations of Mineral Colours.*

I. **S**ublimat dissolved in fair water, and mixed with a little spirit of Urine, makes a *milk whit* mixture in a moment: which by addition of *Aqua Fortis*, immediately again becomes *transparent*.

II. If *Sublimat* two ounces, and *Tin-glass* one ounce be sublimed together, you will have a sublimat not inferior to the best *orient Pearls* in the world.

III. *Silver* dissolved in *Aqua fortis*, and evaporated to dryness, and fair water poured two or three times thereon, and evaporated, till the *calx* is dry, leaves it of a *Snow whiteness*: which rubbed upon the skin, (wetted with spittle, water or the like) produces a deep *blackness*, not to be obliterated in some days.

*With this, Ivory, hair, and horns may be dyed in fair water of a lasting black.*

IV. *Coral* dissolved by oyl of vitriol, Sulphur, or spirit of Vinegar, and precipitated by oyl of Tartar, yields a *Snow whiteness*. The same of crude Lead and Quicksilver dissolved in *Aqua Fortis*: So butter of Antimony rectified by bare affusion in much fair water, will (though Unctuous) be precipitated into that *Snow white powder* which (being washed from its corrosive salts) is called *Mercurius Vitæ*: the like of which may be made without the addition of any Mercury at all.

V. *Mercury Sublimat* and *precipitate* yields (with the spirit of Urine, Harts horn, or the like) a *white precipitate*: but with the solution of *Pot ashes*, or other

*Lixivate* salts an *Orange tawny*. And if on a filtrated solution of *Vitriol*, you put the solution of a *fixed salt*, there will subside a copious substance far from whiteness, which Chymists call the Sulphur of *Vitriol*.

VI. If Copper two ounces be mixed with Tin one ounce, the reddishness will vanish: and if Arsenick (calcined with Nitre) in a just proportion be mixed with melted Copper, it will be blanch'd both within and without.

VII. Fine powders of blew Bice, and yellow Orpiment, slightly mixed, give a good green: and a high yellow solution of good Gold in *Aqua regia*, mixed with a due quantity of a deep blew solution of crude Copper in strong spirit of Urine, produces a *transparent green*: And so blew and yellow *Amel* fused together in the flame of a Lamp, being strongly blowed on without ceasing, produces at length a *green colour*.

VIII. An urinous salt, largely put into the dissolution of blew *Vitriol* in fair water, turn'd the liquor and corpuscles (which resided) into a yellowish colour like yellow Oker.

IX. *Verdigriese* ground with salt *Armoniac* and the like (digested for a while in a dunghil) makes a *glorious blew*.

X. The true glass of *Antimony* extracted with acid spirits (with or without Wine) yields a *red tincture*.

XI. Balsam of Sulphur (of a deep red in the glass) shaken about, or dropt on paper give a yellow stain.

XII. If Brimstone and *Sal Armoniac* in powder of each five ounces, be mixed with quick-lime in powder six ounces, and distilled in a Retort in sand by degrees; you will have a volatil spirit of Sulphur of excellent redness, though none of the ingredients be so.

So also oyl of *Anniseeds* mixed with oyl of *Vitriol*, gives

in

*in a trice a blood red colour, which soon decays.*

XIII. Fine silver dissolved in *Aqua fortis*, and precipitated with spirit of Salt; upon the first decanting the liquor, the remaining matter will be *purely white*; but lying uncovered, what is subject to the ambient air will lose its whiteness.

XIV. *Sublimate* dissolved in a quantity of water and filtered, till it is as clear as *Crystal*, mixed (in a Venice glass) with good oyl of Tartar *per deliquium* filtered, (three or four drops to a spoonful) yields an opacous liquor of a deep *Orange colour*; after which if four or five drops of *Oyl of Vitriol* be dropt in, and the glass straightway be strongly shaken, the whole liquor will (to admiration) be *colourless without sediment*. And if the filtered solution of *sublimed Sal-armoniack* and *Sublimate* of each alike be mixt with the solution of an *Alcaly*, it will be *white*.

XV. Spirit of *Sal Armoniack* makes the solution of *Verdigriese* an excellent *Azure*; but it makes the solution of *Sublimate* yield a white precipitate.

XVI. So the solution of filings of Copper in spirit of Urine (made by fermentation) gives a lovely *Azure colour*: which with oyl of *Vitriol* (a few drops to a spoonful) is *deprived* in a trice of the same, and makes it like *fair water*. And so a solution of *Verdigriese* in *fair water*, mixed with strong *Spirit of Salt*, or dephlegmed *Aqua fortis*, makes the *greenness* almost totally to disappear.

XVII. Quick-silver mixed with three or four times its weight of good oyl of *Vitriol*, and the oyl drawn off in sand, through a glass Retort, leaves a *snow white precipitate*; which by affusion of fair water, becomes one of the loveliest *light yellows* in the world, and a *durable colour*.

XVIII. Tin calcined *per se* by fire, affords a very white calx

calx called *putty*: Lead, a red powder called *Minium*: Copper, a dark or blackish powder: Iron, a dirty yellowish colour, called *Croesus Martis*: and Mercury, a red powder.

XIX. *Gold* dissolved in *Aqua Regia* ennobles the Menstruum with its own colour: *Silver* Coyn dissolved in *Aqua fortis* yields a tincture like that of Copper; but *fine silver* a kind of faint blewishness; *Copper* dissolved in spirit of Sugar (drawn off in a glass Retort) or in oyl or spirit of Turpentine, affords a green tincture; but in *Aqua fortis*, a blew.

XX. *Vermilion* is made of *Mercury* and *Brimstone* sublimed together in a due proportion.

XXI. Glass may have given to it a lovely golden colour with Quick silver; but it is now coloured yellow generally with Calx of silver: yet shell silver, (such as is used with pen or pencil) mixed with a convenient proportion of powdered glass, in three or four hours fusion, gave a lovely Saferine blew.

XXII. Glass is tinged Green (by the Glass-men) with the *Calx of Venus*: which Calx mixed with an hundred times its weight of fair glass, gave in fusion a blew coloured mass.

XXIII. *Putty* (which is Tin calcined) as it is white of it self, so it turns the purer sort of glass metal into a white mass, which when opacous enough, serves for *white Amel*.

XXIV. This *White Amel* is as it were the Basis of all those fine Concretes, that Gold-smiths, and several Artificers use, in the curious art of *Enameling*; for this white and fuseable substance, will receive into it self, without spoiling them, the colours of divers other Mineral substances, which like it will endure the fire.

XXV. Glass is also tinged blew with the dark mineral called *Zassera*; and with *Manganese* or *Magnesia*  
in



in a certain proportion, which will tinge glass of a red Colour; and also of a Purplish or Murry; and with a greater quantity, into that deep colour which passes for black.

XXVI. Yellow Orpiment sublimed with Sea Salt, yields a white and Crystalline Arsenick; which Arsenick coloured with pure Nitre being duly added to Copper when 'tis in fusion, gives it a whiteness both within and without.

XXVII. So *Lapis Calaminaris* turns Copper into Brass.

XXVIII. And Zink duly mixed with Copper when 'tis in fusion, gives it the noblest golden colour that was ever seen in the best gold.

XXIX. Copper dissolved in *Aqua fortis* will imbue several bodies of the colour of the solution.

XXX. Lastly, Gold dissolved in *Aqua Regia* will (though not commonly known) dye Horns, Ivories and other bones of a durable purple colour: And the Crystals of Silver made with *Aqua fortis*, (though they appear white) will presently dye the Skin, Nails, Hair, Horn, and Bones, with a Black not to be washed off.

## CHAP. XXIX.

## Of Metals,

I. **T**O harden Quick-silver.

Cast your Lead separated from its dross into a vessel, and when it begins to cool, thrust in the point of a stick, which take out again and cast in the Argent Vive, and it will congeal: then beat it in a mortar, and do so often; when it is hard, melt it often, and put it into fair water, doing it so long till it is hard enough, and may be hammered.

## II. To tinge Quick-silver of the colour of gold.

Break it into small pieces (being hardned) which put into a crucible, with the powder of *Cadmia stratum super stratum*, mixed with pomegranate peels, Turmeric (beaten fine) and Raisins; cover the crucible and lute it well, dry it well; and then set it on a fire for six or seven hours, that it may be red hot; then blow it with bellows till it run, which then let cool whilest covered with coles, and it will have the colour of gold.

## III. To fix Quick-silver being hardned.

This is done with fine powder of Crystal glass, laid with the metal *stratum super stratum* in a crucible covered and luted; heating it all over red hot, and then melting of it.

## IV. To make Quick-silver malleable.

First harden it by the first Section, then break the metal into small pieces, and boil it a quarter of an hour in sharp vinegar: then add a little Sal Armoniack, and digest all together for ten or twelve days; then boil all together in a luted crucible, till it is red hot, and by degrees

degrees crack: lastly, hang the Mercury in a pot with brimstone at bottom to cover it; lute it and let it into the fire, that it may grow hot by degrees, and receive the fume of the Sulphur; do thus for a month once a day, and the Mercury will run and be hammered.

V. *Another way of tinging Mercury.*

Take purified Mercury one ounce, Sulphur two ounces, Aqua fortis three ounces, let them all stand till the water grow clear; distill this with its sediment, and at bottom of the Limbeck: you shall find the Mercury hard, and of an exact colour.

VI. *To colour and soften Gold.*

Dissolve Verdigrise in Vinegar, and strain it through a felt, then congeal, and when it begins to wax thick, put to it some Sal armoniack, and let it harden a good while, then melt gold with it, and it will heighten the colour and make it soft.

VII. *To make Gold and Silver softer.*

Take Mercury Sublimate, Sal armoniack, of each alike, powder them, melt the gold, and put to it a little of this powder, and it will be soft.

VIII. *Another way to do the same.*

Take Vitriol, Verdet, Sal Armoniack, burnt brass of each half an ounce, mix them with Aqua fortis, let it so repose in the heat two days, then let it harden, do thus three times with Aqua fortis, and let it dry, make it into powder, to one dram put one ounce of gold three times and it will be softer.

IX. *Another way to do the same in silver.*

Take Salt-peter, Tartar, Salt, Verdet, boil all together, till the water is consumed, then put to it Urine, and let it so consume, and you shall have an oyl, which put into melted silver will do the same.

Or thus, Take as many wedges as you have melted, put them one night into a crucible in a furnace, but so as they  
melt

melt not, and they will be soft and fair.

Or thus, Take honey, oyl, of each alike, in which quench the Gold or Silver three or four times, and it will be softer.

Or thus, Take Mastich, Frankincense, Myrrh, Borax, Vernix, of each alike, all in powder.

Or thus, Quench the Gold or silver in water of Sal armoniack, and it will be soft.

X. To tinge silver of a golden colour.

Take fine gold, fine silver, good brass, and brass or copper calcin'd with Sulphur vive, of each alike, melt them down together, and it shall appear to be gold of eighteen carats fine.

XI. Another way to tinge silver.

Take Quick-silver purged three ounces, leaf gold one ounce, mix them and put them into a glass Retort well luted, put it on the fire till it grow hot; then take it off, and add to it Quick-silver purged two ounces, Sal Armoniack one ounce, Sal Ellebrot half an ounce, Borax two drachms; then seal up the glass hermetically, and put it into a continuall fire for three days; then take it out, let it cool, open the retort, take out the matter, and powder it very fine: of which powder mix one ounce with silver five ounces, and it will tinge it into a good gold colour.

Note, Sal Ellebrot is thus made. Take pure common Salt, Sal Gem, Sal alcaly in powder, of each one ounce, juice of mints four ounces, spring water four pound, mingle them, and evaporate. And Quick-silver is purged by washing it in sharp vinegar three or four times and straining it; or by subliming it which is better.

XII. To bring silver into a calx.

This is done by amalgamating of it with Quick-silver, and then subliming of it; or by dissolving it in Aqua fortis, and precipitating it with the solution of salt



salt in fair water, and then washing it with warm water often to free it from the salts: or else by mingling the fillings with sublimed Mercury, and in a retort causing the Mercury to ascend, which will leave at bottom the Calx of silver, fit for jewels, &c.

**XIII. To blanch Silver.**

Take *Sal armoniack*, *Roch alom*, *Alom plumosum*, *Sal gem*, *Argal*, *Roman Vitriol*, of each alike; powder and mix them, and dissolve them in fair water, in which boil the silver so long, till you see it wonderful white.

**XIV. To colour silver of a Gold colour.**

Take Salt-peter two pound, Roch Alom five pound, mingle, and distil them, keeping the water for use. When you use it, melt the Silver, and quench it in the said water.

**XV. To tinge Brass of a Gold Colour.**

Dissolve burnt brass in *Aqua fortis* (made of *Vitriol*, *Salt-peter*, *Alom*, *Verdigriese*, and *Vermilion*) and then reduce it again, and it will be much of a gold colour.

**XVI. To make Brass through white.**

Heat Brass red hot, and quench it in water distilled from *Sal Armoniack*, and *Egg-shells* ground together, and it will be very white.

**XVII. To make Brass white otherwise.**

Take egg-shells and calcine them in a crucible, and temper them with the whites of eggs, let it stand so three weeks; heat the brass red hot, and put this upon it.

**XVIII. To make Brass.**

Take Copper three pounds, *Lapis Calaminaris* one pound in powder, melt them together the space of an hour, then put it out.

**XIX. The way to colour Brass white.**

Dissolve a peny weight of Silver in *Aqua fortis*, putting

ting it to the fire in a vessel, till the Silver turn to water; to which add as much powder of white Tartar as may drink up all the water, make it into Balls, with which rub any Brass, and it will be white as silver.

*XX. To tinge Copper of a gold Colour.*

Take Copper, *Lapis Calamixaris*, of each four drachms, Tutty two drachms; heat the Copper red hot twice, quenching it in piss; doing the like by the *Lapis* and Tutty: take of the dissolved Copper half an ounce, adding to it Honey one ounce, boil them till the Honey look black and is dry that it may be powdered, which then beat with the *Lapis* and Tutty: boil them again, till the Copper is melted and it is done.

*XXI. Another way to make Copper of a gold Colour.*

Take the Gall of a Goat, Arsnick, of each a sufficient quantity, and distil them; then the Copper being bright being washed in this water, will turn into the Colour of gold.

*XXII. Another way to do the same.*

Melt Copper, to which put a little Zink in filings, and the Copper will have a glorious golden colour.

*XXIII. To make Copper of a white colour.*

Take Sublimate, Sal Armoniack, of each alike; boil them in Vinegar, in which quench the Copper being made red hot, and it will be like Silver.

*XXIV. Another way to whiten Copper.*

Heat it red hot divers times, and quench it in oyl of Tartar *per deliquium*, and it will be white.

*XXV. Another way to whiten Copper.*

Take Arsnick three ounces, Mercury Sublimate two ounces, Azure one ounce, mix them with good and pure grease like an ointment, with which anoint any Copper vessel, then put that vessel into another, and set it into a digestive heat for two months, after which cleanse it with a brush and water and it is done.

*XXVI. A-*

## XXVI. Another way to whiten Copper.

Take Arsnick calcined with Salt-peter, and Mercury Sublimate, which cast upon melted Copper, and it will be white like Silver.

## XXVII. To soften Copper.

Melt burnt Brass with Borax in a crucible, quench it in Linseed oyl, and then beat it gently on an Anvil; boil it again and quench it in oyl as before, doing thus five or six times, till it is soft enough; and this will neatly unite with Gold, of which you may put in more by half than you can of other Brass.

## XXVIII. To tinge with Iron a gold colour.

Lay in a crucible plates of Iron and Brimstone, *stratum super stratum*, cover and Lute it well, and calcine in a fornace, then take them out and they will be brittle: put them into a pot with a large mouth, and put in sharp distilled Vinegar, digesting till they wax red over a gentle heat: then decant the Vinegar, and add new, thus doing till all the Iron be dissolved; evaporate the moisture in a glass Retort or *Vesica*, and cast the remaining powder on Silver, or other white Metal, and it will look like Gold.

## XXIX. To make Iron or Silver of a Brass Colour.

Take Flowers of Brass, Vitriol, *Sal armoniack*, of each alike in fine powder; boil it half an hour in strong Vinegar, take it from the fire, and put in Iron or Silver, covering the vessel till it be cold, and the metall will be like to Brass, and fit to be gilded: or rub polished Iron with *Aqua fortis* in which filings of Brass is dissolved.

## XXX. To tinge Iron into a Brass colour.

Melt the Iron in a crucible casting upon it *Sulphur vive*, then cast it into small rods, and beat it into pieces (for it is very brittle) then in *Aqua fortis* dissolve it, and evaporate the *menstruum*, reducing the powder by a strong fire into a body again, and it will be good Brass.

## XXXI.

## XXXI. To whiten Iron.

First purge it, by heating it red hot and quenching it in a water made of Ly and Vinegar, boiled with Salt and Alom, doing this so often till it is somewhat *whitened*. The fragments of the Iron beat in a mortar till the Salt is quite changed, and no blackness is left in the Liquor of it, and till the Iron is cleansed from its dross: then *Amalgamate* Lead and Quick-silver together, and reduce them into a powder; lay the prepared plates of Iron and this powder *stratum super stratum* in a Crucible, cover it, and lute it all over very strongly, that the least fume may not come forth, and put it into the fire for a day; at length encrease the fire, so as it may melt the Iron (which will quickly be) and repeat this work till it is white enough: It is whitened also by melting with Lead, the Marchasit or fire-stone and *Arfnick*. If you mix a little silver (with which it willingly unites) with it, it gives a wonderful whiteness, scarcely ever to be changed any more, by any art whatsoever.

## XXXII. To keep Iron from Rusting.

Rub it over with Vinegar mixt with Ceruse; or with the marrow of a Hart: if it be rusty, oyl of Tartar *per deliquium* will presently take it away and cleanse it.

## XXXIII. To cleanse Brass.

Take *Aqua fortis* and water of each alike; shake them together, and with a woollen rag dipt therein rub it over: then presently rub it with an oily cloth; lastly with a dry woollen cloth dipt in powder of *Lapis Calamintaris*, it will be clear and bright as when new.

## XXXIV. To soften Iron.

Take Alom, *Sal armoniack*, Tartar, of each alike, put them into good Vinegar, and set them on the fire, heat the Iron, and quench it therein; or quench it four  
of



or five times in oyl, in which melted Lead hath been put six or seven times.

*XXXV. To make Iron of a Gold colour.*

Take Alom of Melancy in powder, Sea water; mix them: then heat the Iron red hot, and quench it in the same.

*XXXVI. To make Iron of a Silver Colour.*

Take powder of Sal armoniack, unslak'd lime, mix and put them into cold water, then heat the Iron red hot, quench it therein, and it will be as white as silver.

*XXXVII. To soften Steel to grave upon.*

This is done with a *Lixivium* of Oak ashes and unslak'd Lime, by casting the Steel into it and letting it remain there fourteen days. Or thus. Take the Gall of an Ox, Man's Urine, Verjuice, and juice of Nettles of each alike, mix them; then quench steel red hot therein four or five times together, and it will become very soft.

*XXXVIII. To harden Iron or Steel.*

Quench it six or seven times in Hogs blood mixed with Goose grease, at each time drying it at the fire before you dip it again, and it will become very hard and not brittle.

*XXXIX. To solder an Iron.*

Set the joints of Iron as close as you can, lay them in a glowing fire, and take of Venice glass in powder, and the Iron being red hot, cast the powder thereon, and it will solder of it self.

*XL. To counterfeit Silver.*

Take Crystal, Arsnick eight ounces, Tartar six ounces, Salt-peter two ounces, Glass one ounce and an half, Sublimate half an ounce; make them severally into fine powder and mix them: then take three pound of Copper in thin plates which put into a Crucible

(with the former powder *stratum super statum*) to calcine, covering it and luting it strongly; let it stand in the furnace for about eight or ten hours: then take it out, and (being cold) break the pot, and take out all the matter, and melt it with a violent fire, casting it into some mold. Then take purged Brass two pound, of the former metal one pound; melt them together, casting in, now and then, some of the aforesaid powder, after which add half as much of fine silver, melting them together, and you have that which is desired: lastly to make it as white as Silver, boil it in Tartar.

*XLI. Another way to counterfeit Silver.*

Take purified tin eight ounces, Quick-silver half an ounce, and when it begins to rise in the first heat, take powder of Cantharides, and cast into it, with a lock of hair, that it may burn in it; being melted put into it the powder aforesaid, then take it suddenly from the fire, and let it cool.

*XLII. To purge the Brass.*

It is cleaned or purged, by casting into it when it is melted, broken glass, Tartar, Sal armoniack, and Salt-peter, each of them by turns, by little and little.

*XLIII. To tinge Lead of a golden colour.*

Take purged Lead one pound, Sal Armoniack in powder one ounce, Salt-peter half an ounce, Sal Elebrot two drachms; put all into a crucible for two days and it will be thoroughly tinged.

*XLIV. To purge Lead.*

Melt it at the fire, then quench it in the sharpest Vinegar; melt it again and quench it in the juice ofcelandine: melt it again and quench it in salt water: then in Vinegar mixed with Sal armoniack: and lastly melt it, and put it into ashes, and it will be well cleaned.

*XLV. To*

*XLV. To make Lead of a golden colour.*

Put Quick-silver one ounce into a Crucible, set it over the fire till it is hot, then add to it of the best Leaf-gold one ounce, and take it from the fire, and mingle it with purified Lead melted one pound; mingle all well together with an Iron rod, to which put of the filterated solution of Vitriol in fair water one ounce; then let it cool, and it will be of a good colour. Dissolve the Vitriol in its equal weight of water.

*XLVI. To take away the ringing and softness of Tin.*

Melt the Tin, and cast in some Quick-silver, remove it from the fire, and put it into a glass Retort, with a large round belly, and a very long neck, heat it red hot in the fire, till the Mercury sublimes and the Tin remains at bottom; do thus three or four times. The same may be done by calcining of it three or four times, by which means it will sooner be red hot than melt.

*XLVII. To take away the softness and creaking noise of Tin.*

This is done by granulating of it often, and then reducing it again, and quenching it often in Vinegar and a Lixivium of Salt of Tartar. The creaking noise is taken away by melting it seven or eight several times and quenching it in Boys Urine, or else oyl of Walnuts.

*XLVIII. To take away the deaf sound of Tin.*

This is done by dissolving it in *Aqua fortis* over a gentle fire, till the water fly away: doing thus so long till it is all turned to a calx; which mixed with calx of silver, and reduced, performs the work.

*XLIX. To make that Tin crack not.*

Take Salt, Honey, of each alike, and mix them: melt your Tin and put it twelve or more times into it, then strain out the Tin, and it will purge and leave cracking;

Cracking; put it into a crucible, which lute, and calcine it four and twenty hours, and it will be like calx of gold.

*L. To take away the brittleness of any Metal.*

First calcine it and put it under dung; then do thus; when it is red hot at the fire, or melted, quench it often in *Aqua vite* often distilled; or use about them Rosin or Turpentine, or the oyl of it, or wax, suet, Euphorbium, Myrrh, artificial Borax: for if a metal be not malleable, unctuous bodies will oftentimes make them softer, if all these, or some of these be made up with some moisture into little Cakes: and when the metal yields to the fire, by blowing with the bellows, we cast in some of them and make them thick like mud, or clear, then set the Metal to the fire, that it may be red hot in burning coals, take it forth & quench it in them, & so let it remain half an hour to drink in. Or anoint the Metal with dogs grease, and melt it with it, for that will take away much of the brittleness of it, and make it so that it may be hammered and wrought.

*LI. To colour Metal like gold.*

Take Sal armoniack, White Vitriol, Stone Salt, Verdigrise, of each alike, in fine powder; lay it upon the Metal, then put it into the fire for an hour, take it out and quench it in Urine, and the Metal will have the colour of gold.

*LII. To make a kind of Counterfeited Silver of Tin.*

This is done by mingling Silver with Tin melted with Quick-silver, continuing it long in the fire, then being brittle, it is made tough, by keeping it in a gentle fire or under hot Embers (in a Crucible) for about twenty four hours.

*LIII. To Solder upon Silver, Brass or Iron.*

Take Silver five peny weight, Brass four peny weight,  
melt



*melt them together for soft Solder, which runs soonest.*

*Take Silver five peny weight, Copper three peny weight, melt them together for hard Solder.*

Beat the Solder thin and lay it over the place to be Soldred, which must be first fitted, and bound together with Wire as occasion requires: then take Borax in powder, and temper it like pap, and lay it upon the Solder, letting it dry, then cover it with quick coals and blow, and it will run immediately; then take it presently out of the fire, and it is done.

*Note 1. If a thing is to be Soldred in two places, ( which cannot be well done at one time ) you must first Solder with the hard Solder, and then with the soft; for if it be first done with the soft, it will unsolder again before the other be soldred. 2. That if you would not have your Solder run about the piece to be Soldred, rub those places over with Chalk.*

**LIV. To make the Silver tree of the Philosophers.**

Take Aqua fortis four ounces, fine Silver one ounce, which dissolve in it: then take Aqua fortis two ounces, in which dissolve Quick-silver: mix these two Liquors together in a clear glass, with a pint of pure water; stop the glass close, and after a day, you shall see a Tree to grow by little and little, which is wonderful and pleasant to behold.

**LV. To make the Golden tree of the Philosophers.**

Take oyl of Sand or Flints, oyl of Tartar per deliquium, of each alike, mix them well together, then dissolve Sol in Aqua Regis, and evaporate the menstruum, dry the Calx by the fire, but make it not too hot (for then it will lose its growing quality) break it into little bits (not into powder) which bits put into the aforesaid liquor, a fingers breadth one from another in a very clear glass, keep the liquor from the Air, and let

the Calx stand still, and the bits of Calx will presently begin to grow : first swell ; then put forth one or two stems ; then divers branches and twigs, so exactly, as you cannot but wonder to see.

Where note that *this growing is not imaginary but real.*

LVI. *To make the Steel tree of the Philosophers.*

Dissolve Steel in rectified spirit or oyl of Salt, so shall you have a green and sweet solution, swelling like brimstone ; filter it, and abstract all the moisture with a gentle heat, and there will distil over a liquor, as sweet as rain water ( for steel by reason of its dryness detains the Corrosiveness of the spirit of Salt, which remaineth in the bottom, like a blood red mass, and it is as hot on the tongue as fire : ) dissolve this blood red mass in oyl of Flints or Sand, and you shall see it grow up in two or three hours like a tree with stem and branches.

*If you prove this tree at the test, it will yield good gold, which it draweth from the oyl of Sand or Flints ; the said oyl being full of a pure golden Sulphur.*

LVII. *To make oyl of Flints or Sand.*

Take of most pure Salt of Tartar in fine powder twenty ounces ; small Sand, Flints, pebbles, or Crystals in fine powder five ounces, mix them ; put as much of this as will fill an Egg-shell into a crucible ; set it in a furnace, and make it red hot, and presently there will come over a thick and white spirit ; take out the crucible whilest it is hot, and that which is in it, like transparent glass, keep from the air ; after beat it to powder, and lay in a moist place, and it will dissolve into a thick, fat oyl, which is the oyl of Flints, Sand, pebbles or Crystals. *This oyl precipitateth metals, and makes the Calx there more heavy than oyl of Tartar doth ; it is of a golden nature, and extracteth colours from all Minerals ; it is fixed in all fires, maketh fine Crystals,*

*Crystals, and Borax, and maturateth imperfect metals into Gold.*

**LVIII.** *To melt Metals quickly.*

Take a Crucible, and make in it a lay or course of the powder of any metal, then lay upon it a lay of Sulphur, Salt-peter and Saw-dust of each alike mixed together, put a coal of fire to it, and the Metal will immediately be in a mass.

**LIX.** Lastly, He that shall observe the work and reason of the silver, golden and steel trees, may in like manner produce the like out of the Calx of other Metals.

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C H A P. XXX.

*Of the Instruments and Materials of Casting.*

**I.** **H**E that would learn to cast, must be provided of all the chief Tools thereto belonging; which are 1. A Trough, 2. Sand, 3. A Flask, 4. Skrew, 5. Tripoli, 6. The Medal or form, 7. A Furnace, 8. Crucibles, 9. A Pipe. 10. Tongs, 11. Two Oak plates, 12. Plegets of wool, 13. Oyl and Turpentine, 14. A Hares foot, 15. Brushes.

**II.** The Trough is a four-square thing about half a foot deep or something more; and its use is to hold the Sand.

**III.** Of Sand there is various sorts, the chief are Higate Sand, and Tripoli; the which to make fit for the work you must order thus.

If it is Higate Sand, you must finely sift it; if Tripoli, you must first beat it fine, then sift it through a fine sieve:

<sup>2</sup> *either of these fine sands you must put of pure fine Bole (an ounce to nine ounces) well beaten, dissolved in water, and lastly reduced into fine powder; which powders you must moderately moisten with this Magisterial water, viz. filterated Brine made of decipitated common Salt: or the same, mixed with Glair of Eggs.*

IV. The *Flask* is a pair of Oval Irons, containing only sides to hold the Sand, which must be pressed hard thereinto: and a passage or mouth for the metal to run in at.

V. The *Skrew* is an Iron Press, between which the flask is put and prest, after that it is filled with Sand, and hath received the form or impression to be cast.

VI. *Tripoli* is that of which the second sort of Sand is made, which here ought to be calcined and beaten into impalpable powder, to strew over the sandy moulds; first that the sides of the flask may not cleave together when they are full; secondly that the thing cast may have the perfect form and impression, without the least scratch or blemish imaginable.

The *Medal* or form, is that which is to be impressed upon the Sand; whose likeness we would imitate.

VIII. The *Furnace* is that which contains the fire, where the Crucible is put, for the Metal to melt in which is generally melted with Charcoal.

IX. The *Crucibles* are calcining or melting pots, (commonly three-square) made so as they may endure the fire all over, in which the metal is to be melted.

X. The *Pipe* is a hollow Reed, or piece of Tin, to blow coals and filth out of the Crucible;

XI. The *Tongs* are a crooked Instrument to take coals out of the crucible with, as also to stir and repair the fire; and to take the pot out of the furnace when you go to Cast,

XII. The



XII. The *two Oak plates* are to be smooth, and to be put between the flask and the sides of the skrew, on each side.

XIII. *Pledgets of wool* are to be put between the Oak plates and the sand to fill up empty spaces if there be any.

XIV. The *Oyl and Turpentine* is to wet some paper or cotton threads, which must be set on fire, to smoak the Impression or Mould ( being dry ) that the metal may run the better.

XV. The *Hares foot* is to wipe the hollow places in the Mould, if they should be too much filled with smoak.

XVI. The *Brushes* ought to be two, to wit one with thick bar Wire strings, another with Hogs Bristles, wherewith the work ( both before and after casting ) ought to be rubbed and cleansed.

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C H A P. XXXI.

*The Way and Manner of Casting.*

I. **W** Ash the Medal in Vinegar, in which put some Salt and Straw ashes; and rub it well with the aforesaid hair brush, then wash it with water, and dry it well.

II. Place the female part of the flask upon one of the Oak plates; so that the middle part, viz. that which is joined to the other, may lie downwards.

III. Then put the cleansed Medal in the flask upon the Oak plate, in a right line to the mouth of the flask; and if there be two, let them be placed so, that there may be a place left in the middle for the melted metal to run in at.

IV. Then

IV. Then take of the aforesaid earth or sand prepared, ( that is, so much moistned with the Magisterial water, that being crushed between the hands or fingers, it will not stick but like dry flower, and will stand with the print of the hand closed together ) and press it on well in the flask upon the Medal with the fleshy part of your fingers or hand ; then with a rule strike off all the superfluous sand that sticks about the flask.

V. This done, the plegets of wool, or a woollen cloth, must be laid upon it, and then the other Oak plate, and then turned up with both hands, the plates being both held close.

VI. Then taking off the upper plate ; put upon it the male part of the flask, which fill with sand in like manner ( the Medal being now between ) pressing it down as before, and then with a ruler striking away the superfluous sand.

VII. Upon which lay a woollen cloth, and gently lift off the top, or upper part of the flask, so that the medal may be taken forth.

VIII. All things being thus done with a knife ( or some such like ) cut the passage for the metal, which let be a little dried : then,

IX. Either strew over the side of the impression ( now taken off ) with a calcined Tripoli ground impalpable ; applying it upon the female flask again ; turn the female flask uppermost, which take off, and strew it in like manner, with the calcined Tripoli, and putting them together again, press them so hard, as that the fine Tripoli may receive the most perfect impression of the Medal, which then take out, by separating the sides of the flask, and gently shaking that part which holds it, till it falls out :

X. Or with Cotton wet in Oyl and Turpentine and set on fire let the Impression be smoaked ; and if any super-

Superfluous fume be taken, wipe it off with a Hares foot.

XI. Then join the sides of the flask together, putting them with the woolen cloaths between the Oaken plates, which put into the Press, and skrew them a little.

XII. Then the Metal being melted, put it into the mould being hot, which if it be Silver, or blanch'd Brass, or Copper, it will run well enough.

XIII. But if it runs not well, you may cast in about the hundred part of Mercury sublimate, and an eighth part of Antimony; for so it will not only run well, but also be a harder metal.

XIV. Lastly, the Medal being cooled, take it neatly out and keep it.

*Where note* 1. That so long as the Impression or mould is not spoiled, you may still cast more Medals therein; but when it decays, you must perfectly renew the whole work as at first. 2. That you may blanch them with a pure whiteness by the ninth Section of the nine and twentieth Chapter of this Book; or thus, if they be of whitened Brass, Take Sal armoniack one ounce and an half, Salt-peter two ounces and a half, Leaf silver twenty four grains; mix them and evaporate them in a Luted crucible, having a hole in the cover, till all the moisture is gone; being cold beat all into fine powder; of which take one ounce, Salt, Alom, Tartar, of each one handfull, fair water a sufficient quantity; mix and boil all in a glazed vessel, in which put the Medals boiling them till they are purely white: then rub them with the Tartar in the bottom very well, wash them in fair water and dry them. 3. That if the Medals be of Gold, or of a golden colour, you may beighen it with Verdigrise and Urine.

## C H A P. XXXII.

*Of Glass and Precious Stones.***I.** *To melt Crystall.*

Beat Crystal to bits, and put them into an Iron spoon, cover it and lute it well, and heat it in the fire till it is red hot, which quench in oyl of Tartar: this do so often, till they will easily beat to powder in a mortar, which will then easily melt.

*This is of use to counterfeit Jewels with.*

**II.** *To make a Cement for broken Glasses.*

Glair of Eggs mixed with Quick-lime will join broken pieces of Glass together, and all earthen pots, so as that they shall never be broken in the same place again.

*Or thus,* Take old liquid Varnish, and join the pieces with; bind them together and dry them well in the Sun or in an Oven, and they will never unglew again: but put no hot liquor into them then.

*Or thus,* Take White-lead, Red-lead, Quick-lime, Gum sandrack of each one ounce, mix all with glair of eight eggs.

*Or thus,* Take White-lead, bole, liquid varnish as much as sufficeth.

*Or thus,* Take White-lead, Lime, glair of Eggs, as much as sufficeth.

*Or thus,* Take fine powder of glass, Quick-lime, Liquid varnish, of each a sufficient quantity.

*Or thus,* Take Quick-lime powdered, liquid varnish, glair of Eggs, of each alike: grind them upon a stone: this is a strong glew even for stones.

*Or*



*Or thus,* Take Calcined flints and egg-shells of each alike, and with whites of Eggs and gum tragacanth or dissolution of Gum Sandrack make glew, this in few days will be as hard as stone.

*Or thus,* Take calcined flints two pound, Quicklime four pound, Linseed oyl so much as may temper the mixture, this is wonderful strong: but with liquid varnish it would be stronger.

*Or thus,* Take fish glew, and beat it thin, then soak it in water till it is like paste, make roulds thereof which draw out thin: when you use it, dissolve it in fair water over the fire, letting it seeth a while and scumming of it, and whilest it is hot use it: This not only cements glafs, but Tortoise shell and all other things.

III. *To make Glafs green.*

Green glafs is made of fern ashes, because it hath much of an alkaly salt. Crystal or Venice Glafs is tinged green with Ore of Copper; or with the Calx of Copper five or six grains to an ounce.

IV. *To counterfeit a Diamond.*

Take a Saphyre of a faint colour, put into the middle of a crucible in quick Lime, and put it into a gentle fire, and heat it by degrees till it is red hot, keep it so for six or seven hours; let it stand in the crucible till it is cold, (lest taking it out hot it should break) so will it lose all its colour, and be perfectly like a Diamond, so that no file will touch it: if the colour is not all vanished at the first heating, you must heat it again till it is perfect.

V. *To prepare the Salts for counterfeit Gems:*

The Salts used in making counterfeit Gems, are chiefly two, the first is made of the herb Kali; the second of Tartar; their preparations are according to the usual way (but in Glafs vessels.)

VI. *To prepare the matter of which Gems are made.*

The

The matter is either Crystal or flint that is clear and white: put them into a crucible in a reverberatory heat (the crucible-being covered) then take them out and cast them into cold water, so will they crack and easily reduce to powder: of which powder take an equal quantity with Salt of Tartar (or Sal Alkali) to which mixture add what Colour you please, which must be either Metalline or Mineral: put them into a very strong Crucible (filling it about half full) cover it close, and melt all in a strong fire till it become like glass.

*Where note, in melting you must put an Iron rod into it, and take up some of it, and if it is free from bubbles, grains, or specks, it is fused enough: if not, you must fuse it till it is free.*

**VII. To make a counterfeit Diamond of Crystal.**

Put Crystal in a crucible and set it in a glass furnace all night, and then bring it to fine powder, mix it with equal parts of Sal Tartari, digest all night in a vehement heat, but yet not to melt, then take them out, and put them into another vessel which will stoutly endure the fire; let them stand melted two days and take out the mass.

**VIII. To make a Chalcedon.**

Mingle with the powder of Crystal, a little calcined silver, and let it stand in fusion twenty four hours.

**IX. To make counterfeit Pearls.**

Mix Calx of Luna and Egg-shells with leaf silver ground with our best varnish, of which make paste, and having bored them with a hogs bristle, dry them in the Sun, or an Oven.

**X. To counterfeit a Ruby.**

Take Sal Alkaly four ounces, Crystal three ounces, Scales of Brass half an ounce, leaf gold six grains, mix all, and mele them in a reverberatory.

**XI. To**

**XI. To counterfeit a Carbuncle.**

Mix Crystal with a little red Lead, putting it into a furnace for twenty four hours, then take it out, powder and searce it, to which add a little Calcined brass; melt all again, and add a small quantity of leaf gold, stirring it well three or four hours, and in a day and night it will be done.

**XII. An Artificial Amethyst.**

Take Crystal one pound, Manganese one drachm, mix and melt them.

*Or thus,* Take Sal Alkaly three ounces, powder of Crystal four ounces, filings of Brass half an ounce, melt all in a strong fire.

**XIII. An Artificial Jacynth.**

Put Lead into a strong crucible, and set it into a furnace, let it stand there about six weeks till it is like glass, and it will have the natural colour of a Jacynth not easily to be discerned.

**XIV. An Artificial Chrysolite.**

Mix with melted Crystal a sixth part of scales of Iron, letting it stand in a vehement fire for three days. *Or thus,* to the mixture of the Topaze add a little Copper.

**XV. An Artificial Topaze.**

To Crystal one pound, add *Crocus Martis* two Drachms, Red Lead three ounces, first putting in the Lead, then the *Crocus*.

**XVI. Artificial Corals.**

Take the scrapings of Goats horns, beat them together, and infuse them in a strong *Lixivium* made of *Sal fraxini* for five days; then take it out and mingle it with Cinnaber dissolved in water; set it to a gentle fire that it may grow thick; make it into what form you please, dry, and polish it. *Or thus,* Take Minii one ounce, Vermilion ground fine half an ounce, Quick-

Quick-lime, and powder of Calcined flints, of each six ounces, a *Lixivium* of Quick-lime and Wine, enough to make it thick: add a little Salt, then make it into what form you please, and boil it in Linseed oyl.

**XVII. An Artificial Emerald.**

Take Brass (three days) Calcined in powder, which put again into the furnace with oyl and a weaker fire; let it stay there four days, adding a double quantity of fine sand or powder of Crystal: after it is something hard, keep it at a more gentle fire for twelve hours, and it will be a lovely, pleasant, and glorious green. *Or thus*, Take fine Crystal two ounces and an half, Sal Alkali two ounces, *flus aris* infused in Vinegar and strained one ounce, *Sal Tartari* one ounce and half; mix and lute them into a crucible, and put all into a glass-makers furnace for twenty four hours, and it will be glorious indeed. *Or thus*, Take Crystal ten ounces, Crocus Martis, and Brass twice calcined, of each one pound, mix and melt them, stirring them well with an Iron Rod,

**XVIII. An Artificial Saphyre.**

To melt Crystal put a little *Zaphora* (two Drachms to a pound of Crystal) then stir it continually from top to bottom with an Iron hook, till it is well mixed, keep it in the furnace three days and it is done: yet when it is well coloured, unless it be presently removed from the fire, it will lose its tincture again.

**XIX. Artificial Amber.**

Boil Turpentine in an earthen pot, with a little cotton (some add a little oyl) stirring it till it is as thick as paste, then put it into what you will, and set it in the Sun eight days, and it will be clear and hard, of which you may make beads, hafts for knives, and the like.

**XX. Another way to counterfeit Amber.**

Take



Take sixteen yolks of Eggs, beat them well with a spoon; Gum Arabick two ounces, Cherry-tree Gum an ounce, make the Gums into powder, and mix them well with the yolks of Eggs; let the Gums melt well, and put them into a pot well leaded, then set them six days in the Sun, and they will be hard, and shine like glass; and when you rub them, they will take up a wheat straw, as other Amber doth.

*XXI. To make yellow Amber soft.*

Put yellow Amber into hot melted wax well scum'd and it will be soft, so that you may make things thereof in what form and fashion you please.

*XXII. Another Artificial Amber.*

Take whites of eggs well beaten, put them into a vessel with strong white wine Vinegar, stop it close, let it stand fourteen days, then dry it in the shade, and it will be like to Amber.

*XXXIII. Another Artificial Amber.*

Break whites of eggs with a sponge, take off the froth, to the rest put Saffron, put all into a glass close stopped, or into a Copper or brazen vessel, let it boil in a kettle of water, till it be hard; then take it out and shape it to your liking, lay it in the Sun and anoint it often with Linseed oyl mixed with a little Saffron; or else being taken out of the Kettle, boil it in Linseed-oyl.

*XXIV. To make white Enamel.*

Take Calx of Lead two ounces, Calx of Tin four ounces, make it into a body with Crystal twelve ounces, role it into round balls, and set it on a gentle fire for a night, stirring it about with an Iron rod, till it is melted, and it is done.

*XXV. The general preparations and proportions of Mineral Colours.*

Plates of Copper must be made red hot, & then quenched in

in cold water; of which five or six grains mixed with Crytal and Sal Tartari of each half an ounce, and melted, will colour a Sea-green. Iron must be made into a Crocus in a reverberatory fire; of which eight or ten grains will tinge the said ounce of mixture into a yellow or hyacinth colour. Silver is to be dissolved in *Aqua fortis* and precipitated with oyl of flints, then dulcified with water and dried; of this five or six grains to an ounce, gives a mixed colour. Gold must be dissolved in *Aqua Regis*, and precipitated with liquor of flints, then sweetned and dried; of which five or six grains to one ounce gives a glorious Sapherine colour. Gold melted with Regulus Martis nitrosus five or six grains to one ounce, gives an incomparable Rubine colour. Magnesia in powder only ten or twelve grains to one ounce, makes an Amethyst Colour. Granata in powder only ten or fifteen grains to one ounce, will tinge the mass into a glorious Smaragdine Colour, not unlike to the natural.

XXVI. Lastly, Common Copper makes a Sea-green: Copper of Iron a Grass-green: Granats, a Smaragdine: Iron, Yellow or Hyacinth: Silver, White, yellow, green and granat: Gold, a fair skie colour: Wismut, a common B'ew: Magnesia, an Amethyst colour: Copper and Silver, an Amethyst colour: Copper and Iron, a pale green: Wismut and Magnesia, a purple colour: Silver and Magnesia, an Opal; and the like.

XXVII. To make Azure.

Take Sal armoniack three ounces, Verdigrise six ounces, make them into powder, and put them into a glass with water of Tartar, so that it may be somewhat thick, stop the glass and digest in Sand in Horse-dung for eight or ten days and it will be good azure.

XXVIII. Another way to make good beyond-sea Azure.

Beat

Beat common azure with Vinegar, and anoint therewith thin plates of Silver, and put the same over a vessel full of Urine, which set over hot ashes and coals, moving and stirring it till it looks like good azure.

C H A P. XXXIII.

*The Ways and Manner of Gilding.*

**I.** *To lay Gold on any thing.*

Take red Lead ground fine, temper it with Linseed oyl: write with it and lay Leaf gold on it, let it dry, then polish it.

**II.** *To lay Gold on Glass.*

Take Chalk and red Lead of each alike, grind them together, and temper them with Linseed oyl: lay it on, and when it is almost dry, lay leaf gold on it; let it dry, then polish it.

**III.** *To gild Iron with a water.*

Take Spring water three pound, Roch Alom three ounces, Roman Vitriol, Orpiment, one ounce, Verdigrise twenty four grains, Sal gem three ounces; boil all together, and when it begins to boil, put in Tartar and Bay salt of each half an ounce; continue the boiling a good while, then take it from the fire, strike the Iron over therewith, dry it against the fire and burnish it.

**IV.** *To lay Gold on Iron or other Metals.*

Take liquid Varnish one pound, oyl of Linseed and Turpentine, of each one ounce; mix them well together: strike this over any metal, and afterwards lay on the gold or silver, and when it is dry polish it.

V. *To Gild Silver or Brass with Gold water.*

Take Quick-silver two ounces, put it on the fire in a Crucible, and when it begins to smoak, put into it an Angel of fine Gold; then take it off immediately, for the Gold will be presently dissolved: then if it be too thin, strain a part of the Quick-silver from it, through a piece of Fustian: this done, rub the Gold and Quick-silver upon Brass or Silver, and it will cleave unto it, then put the said Brass or Silver upon quick coals till it begin to smoak, then take it from the fire, and scratch it with a hair brush; this do so long till all the Mercury is rubbed as clean off as may be, and the gold appear of a faint yellow: which colour heighten with Sal Armoniack, Bole and Verdigrise ground together and tempered with water.

*Where note, that before you gild your Metal, you must boil it with Tartar in Beer or water, then scratch it with a wire Brush.*

VI. *Another water to gild Iron, Steel, Knives, Swords and Armour with.*

Take Fire-stone in powder, put it into strong red wine vinegar for twenty four hours, boil it in a glazed pot, adding more Vinegar as it evaporates, or boils away: into this water dip your Iron, Steel, &c. and it will be black; dry it, then polish it, and you will have a gold colour underneath.

VII. *Another water to gild Iron with.*

Take Salt-peter, Roch-alom burnt of each half an ounce; Sal-armoniack an ounce, all being in fine powder, boil with strong Vinegar in a Copper vessel; with which wet the Iron, &c. then lay on leaf Gold.

VIII. *Another water to gild Iron with.*

Take Roch-alom, and grind it with boys Urine, till it is well dissolved, with which anoint the Iron, heat it red hot in a fire of wood coals, and it will be like Gold.

IX. *To*



IX. To gild Books.

Take Bole Armoniack four peny-weight, Sugar-candy one peny-weight, mix and grind them with glair of Eggs; then on a bound Book, (while in the press, after it hath been smeared with glair of Eggs, and is dried) smear the said composition, let it dry, then rub it well and polish it: then with fair water wet the edges of the Book, and suddenly lay on the gold, pressing it down with Cotton gently, this done let it dry, and then polish it exactly with a tooth.

X. Another way of Gilding Iron.

Take water three pound, Alom two ounces, Sal gem three ounces, Vitriol Roman, Orpiment of each one ounce, *flos Aëris* twenty four grains; boil all with Tartar and Salt as at the third Section.

XI. To make Iron of the colour of Gold.

Take Linseed oyl three ounces, Tartar two ounces, yolks of Eggs boiled hard and beaten two ounces, Aloes half an ounce, Saffron five grains, Turmeric two grains: boil all in an Earthen vessel, and with the oyl anoint Iron, and it will look like Gold. *If there be not Linseed oyl enough, you may put in more.*

XII. A Golden liquor to colour Iron, Wood, Glass, or bones with.

Take a new laid Egg, through a hole at one end take out the white, and fill up the Egg with Quicksilver two parts, Sal-armoniack finely powdered one part; mix them all together with a Wire or little stick: stop the hole with melted Wax, over which put an half Egg-shell: digest in horse dung for a month, and it will be a fine golden coloured Liquor.

XIII. To gild Silk and Linnen.

Take Glew made of parchment, lay it on the Linnen, or Silk, &c. gently, that it may not sink: then take Ceruse, Bole and Verdigrise of each alike, mix and

and grind them upon a Stone: then in a glazed vessel mix it with varnish, which let simmer over a small fire, then keep it for use.

*XIV. Another of a pure gold colour.*

Take juice of fresh Saffron, or (for want of it) Saffron ground, the best clear Orpiment of each alike: grind them with Goats gall or gall of a Pike (which is better) digest twenty eight days in horse dung, and it is done.

*XV. To gild on Wood or Stone.*

Take Bole Armoniack, Oyl Ben, of each a sufficient quantity; beat and grind them together: with this smear the wood or stone, and when it is almost dry, lay on the Leaf-gold, let it dry, then polish it.

*XVI. To gild with Leaf-gold.*

Take leaves of gold, and grind them with a few drops of honey, to which add a little gum-water, and it will be excellent to write or paint with.

*XVII. To gild Iron or Steel.*

Take Tartar one ounce, Vermilion three ounces, Bole armoniack, Aqua Vitæ of each two ounces, grind them together with Linseed oyl, and put thereto *Lapis Calaminaris* the quantity of a hassle nut; and grind therewith in the end a few drops of Varnish; take it off the Stone, strain it through a linnen cloth (for it must be as thick as honey) then strike it over Iron or Steel, and let it dry; then lay on your Silver or Gold, and burnish it.

*XVIII. To colour Tin or Copper of a golden Colour.*

Take Linseed oyl, set it on the fire, scum it; then put in Amber, Aloes hepatick, of each alike, stir them well together till it wax thick; then take it off, cover it close, and set it in the earth three days: when you use it, strike the Metal all over with it, with a pencil, let it dry, and it will be of a golden colour.

*XIX. To*

**XIX.** *To gild any Metal.*

Take strong Aqua fortis, in which dissolve fine Silver, to which put so much Tartar in fine powder, as will make it into paffe, with which rub any metal, and it will look like fine Silver.

**XX.** *To gild so as it shall not out with any water.*

Take Oker calcined, pumice stone of each alike, Tartar a little, beat them with Linseed oyl, and five or six drops of Varnish, strain all through a Linnen cloth, with which you may Gild.

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C H A P. XXXIV.

*Of Paper, Parchment, and Leather.*

**I.** *To make paper waved like Marble.*

Take divers oyled colours, put them severally in drops upon water, and stir the water lightly: then wet the Paper (being of some thickness) with it, and it will be waved like Marble; dry it in the Sun.

**II.** *To write golden letters on Paper or Parchment.*

This may be done by the ninth, tenth, and twelfth Sections of the three and thirtieth Chapter of this Book: or write with Vermilion ground with Gum Armoniack, ground with glair of Eggs, and it will be like gold.

**III.** *To take out blots, or make black Letters vquish, in Paper or Parchment.*

This may be done with Alom water; or with Aqua fortis mixed with common water.

**IV.** *To make Silver letters in Paper or Parchment.*

Take Tin one ounce, Quick-silver two ounces, mix and melt them, and grind them with Gum water.

**V.** *To write with green Ink.*

O 4

Take

Take Verdigrise, Litharge, Quick-silver, of each a sufficient quantity, grind and mingle them with Urine; and it will be a glorious green like an Emerald to write or paint with:

*Or thus*, Grind juice of Rue and Verdigrise with a little Saffron together; and when you would write with it mix it with Gum water: *Or thus*, Dissolve Verdigrise in Vinegar, strain it, then grind it with common water, and a little honey; dry it; then grind it again with gum water, and it is done.

VI. *To write on Paper or Parchment with blew Ink.*

Grind blew with honey, then temper it with Glair of Eggs or gum water made of Isinglafs.

VII. *To Dye Skins Blew.*

Take berries of Elder or Dwarf-elder, first boil them; then smear and wash the Skins therewith, and wring them forth: then boil the berries as before, in the dissolution of Alom water, and wet the Skins in the same water once or twice, dry them and they will be very Blew.

VIII. *To dye Skins into a reddish Colour.*

First wash the Skin in water and wring it well: then wet it with the solution of Tartar and Bay salt in fair water, and wring it again: to the former dissolution add ashes of Crab shells and rub the Skin very well therewith; then wash with common water and wring them out: then wash them with tincture of Madder, in the solution of Tartar; Alom, and the aforesaid Ashes; and after (if not red enough) with the Tincture of Brazil.

IX. *Another way to Dye them red.*

Wash the Skins, and lay them in galls for two hours; wring them out, and dip them into a colour made with *Ligustrum*, Alom and Verdigrise in water: Lastly, twice dye them with Brazil boiled with lye.

X. *Another*



*X. Another way to Dye them Blew.*

Take the best *Indico* and steep it in Urine a day, then boil it with Alom, and it will be good. Or, temper the *Indico* with red Wine, and wash the Skins therewith.

*XI. To dye Skins Purple.*

Take Roch Alom, dissolve it in warm water, wet the Skins therewith drying them again; then take rasped Brazil, boil it in water well, then let it cool; do thus thrice: this done rub the dye over the skins with your hand, which being drye polish.

*XII. To dye Skins of a sad green.*

Take the filings of Iron and Sal armoniack of each, steep them in Urine till they be soft, with which besmear the skin, being stretched out, drying it in the shade: the colour will penetrate and be green on both sides.

*XIII. To dye Skins of a pure sky colour.*

For each skin take *Indico* an ounce, put it into boiling water, let it stand one night, then warm it a little, and with a brush pencil besmear the skin twice over.

*XIV. To dye skins of a pure yellow.*

Take fine Aloes one ounce, Linseed oyl two pound, dissolve or melt them, then strain it; besmearing the skins therewith, being dry, varnish them over.

*XV. To dye Skins green.*

Take Sap green, Alom water, of each a sufficient quantity, mix and boil them a little: If you would have the colour darker, add a little *Indico*.

*XVI. To dye Skins Yellow.*

Infuse Woold in Vinegar, in which boil a little Alom: Or thus, having dyed them Green by the fifteenth Section, dip them in decoction of Privet berries and Saffron and Alom water.

*XVII. To dye them of an Orange Colour.*

Boil Fusslick berries in Alom water: but for a deep Orange, use Turmerick root.

*XVIII. A*

## XVIII. A Liquor to gild Skins, Metals, or Glass.

Take Linseed Oyl three pound, boil it in a glazed vessel till it burns a feather being put into it; then put to it Pitch, Rozin, dry Varnish, or Gum Sandrach, of each eight ounces, Aloes Hepatica four ounces; put all in powder into the oyl, and stir them with a stick, the fire being a little encreased: if the Liquor is too clear or bright, you may add ounce or two more of Aloes Socratica, and diminish the Varnish, so the Liquor will be darker and more like Gold. Being boiled, take it, and strain it, and keep it in a Glass for use: which use with a pencil.

## C H A P. XXXV.

*Of Wood, Horns, and Bones.*

**I. T**O Dye Elder, Box, Mulberry-tree, Pear-tree, Nut-tree of the colour of Ebony.

Steep the wood in Alom water three or four days, then boil it in Common Oyl, with a little Roman Vitriol and Sulphur.

*Where note, the longer you boil the wood, the blacker it will be, but too long makes them bristle.*

**II.** To Dye Bones green.

Boil the Bones in Alom water, then take them out, dry them and scrape them, then boil them in Lime water with a little Verdigrise.

**III.** To Dye Wood like Ebony, according to Glauber.

Distil an Aqua fortis of Salt-peter and Vitriol.

**IV.** To make Horns black.

Vitriol dissolved in Vinegar and spirit of Wine will make Horns black: so the Snow white Calx of Silver in fair water.

*V. To*

*V. To make Bones white.*

They are strangely made white by boiling with water and Lime; continually scumming of it.

*VI. To dye Bones green.*

Take white Wine-vinegar a quart, filings of Copper, Verdigrise, of each three ounces, Rue bruised one handful; mix them, and put the Bones therein for fifteen days.

*VII. To Dye Wood, Horn, or Bones red.*

First boil them in Alom water, then put them into tincture of Brazil in Alom water for two or three weeks: or into Tincture of Brazil in Milk.

*VIII. To Dye them Blew.*

Having first boiled them in Alom water, then put them into the Dissolution of Indico in Urine.

*To Dye them Green like Emeralds.*

Take *Aqua fortis*. and put as much filings of Copper into it, as it will dissolve; then put the Wood, Horns or Bones therein for a night.

*X. To Dye Bristles and Feathers.*

Boil them in Alom water, and after, while they are warm, put them into Tincture of Saffron, if you would have them yellow: or juice of Elder berries, if blew: or in Tincture of Verdigrise, if green.

*XI. To Dye an Azure Colour.*

Take Roch Alom, filings of Brasse, of each two ounces, Fish glew half an ounce, Vinegar, or Fair water a pint, boil it to the Consumption of the half.

*XII. To soften Ivory and Bones.*

Lay them twelve hours in *Aqua fortis*, then three days in the juice of Beets, and they will be tender, and you may make of them what you will: *To harden them again*, lay them in strong White-wine Vinegar.

*XIII. To make Horns soft.*

Take Urine a Month old, Quick-lime one pound, calcined

calcined Tartar half a pound, Tartar crude, Salt, of each four ounces, mix and boil all together, then strain it twice or thrice, in which put the horns for eight days, and they will be soft.

*XIV. Another way to make them soft.*

Take ashes of which glass is made, Quick-lime of each a pound, water a sufficient quantity, boil them till one third part is consumed, then put a feather into it, if the feather peel it is sodden enough, if not, boil it longer, then clarify it, and put it out, into which put filings of Horn for two days; apoint your hand with oyl, and work the horns as it were paste, then make it into what fashion you please.

*XV. Another way to soften Horns.*

Take juices of Marubium, Alexanders, Yarrow, Celandine and Radish roots, with strong Vinegar, mix them, into which put Horns and digest seven days in horse-dung, then work them as before.

*XVI. To cast Horns in a mould, like as Lead.*

Make a Lixivium of Calcined Tartar and Quick-lime, into which put filings or scrapings of Horn, boil them well together, and they will be as it were pap, tinge it of the colour you would have it, and then you may cast it in a mould, and make thereof what fashioned things you please.

*XVII. To make Ivory white.*

If Ivory be yellow, spotted or coloured, lay it in Quick-lime, pour a little water over it, letting it lye twenty four hours, and it will be fair and white.



CHAP. XXXVI.

*Of Dying Tarn, Linnen Cloth, and the like.*

**I. TO Dye a sad Brown.**

First infuse the matter to be dyed in a strong tincture of Hermodacts: then in a bag put Saffron and ashes, *stratum super stratum*, upon which put water two parts mixed with Vinegar one part; strain the water and Vinegar through hot, fifteen or sixteen times: in this Lixivate Tincture of Saffron put what you would dye, letting it lie a night, then take it out, and hang it up to dry without wringing, which do in like manner the second and third times.

**II. To Dye a Blew Colour.**

Take *Ebulus* berries ripe and well dried, steep them in Vinegar twelve hours, then with your hands rub them, and strain through a linnen cloth, putting thereto some bruised Verditer and Alom.

*Note, if the Blew is to be clear, put more Verditer to it.*

**III. Another excellent Blew Dye.**

Take Copper scales one ounce, Vinegar three ounces, Salt one Drachm; put all into a Copper vessel; and when you would dye, put the said matter into the tincture of Brazil.

**IV. Another excellent Blew Dye.**

Take calcined Tartar three pugils, unslak'd Lime one pugil, make a Lixivium, and filtrate it; to twelve or fifteen quarts of the same water put Flanders blew one pound, and mix them well: set it to the fire, till you can scarcely endure your hand in it: then first boil what you would dye in Alom water, then dry it; afterwards

wards dip it in hot Lye twice or thrice; then put it into the Dye.

V. *A good red Dye.*

Take Brazil in powder, fine Vermilion, of each half an ounce, boil them in Rain water, with Alom one drachm, boil it till it is half consumed.

VI. *Another excellent good Red Dye.*

Take of the Lixivium of unslak'd Lime one pint, Brazil in powder one ounce, boil to the half; then put to it Alom half an ounce, keep it warm, but not to boil: then dip what you would dye, first in a Lixivium of Red wine Tartar, let it dry; then put it into the Dye.

VII. *Another very good Red.*

Take Rosset with gum Arabick, boil them a quarter of an hour, strain it: then first boil what you would dye, in Alom water two hours; after put it into the Dye.

VIII. *To make a fair Russet Dye.*

Take two quarts of water, Brazil one ounce, boil it to a quart; put to it a sufficient quantity of Granie and two drachms of Gum Arabick.

IX. *A good Purple Colour.*

Take Myrtle berries two pound, Alom, calcined Brass of each one ounce, water two quarts, mix them in a Brass kettle, and boil half an hour, then strain it.

X. *A Yellow Colour.*

Take berries of purging Thorn, gathered about Lammas day, bruise them, adding a little Alom in powder; then keep all in a Brass vessel.

XI. *Another good Yellow.*

Put Alom in powder to the Tincture of Saffron in Vinegar.

XII. *A very good Green Colour.*

Take

Take Sap green, bruise it, put water to it, then add a little Alom, mix and infuse for two or three days.

XIII. *To take out Spots.*

Wash the spots with oyl of Tartar *per Deliquium*, two or three times and they will vanish, then wash with water. Spirit of Wine to wash with is excellent in this case. If they be Ink spots, juice of Lemmons or Spirit of Salt is incomparable, washing often and drying it: so also Castle Soap and Vinegar.

CHAP. XXXVII

*Of the Dying of Stuffs, Cloaths and Silks.*

I. *To make a substantial blew Dye.*

Take Woad, one pound, and mix it with four pound of boiling water: Infuse it twenty four hours; then die with it all white colours.

II. *To make a firm black Dye.*

First Wad it with the former Blew: then take of Galls one pound; water sixty pound; Vitriol three pounds: first boil the Galls and water with the Stuff or Cloath, two hours: then put in the Coperas at a cooler heat for one hour: then take out the Cloath or Stuff and cool it, and put it in for another hour, boiling it: Lastly take it out again, cool it, and put in once more.

III. *To make an excellent Yellow Dye.*

Take liquor or decoction of Wheat-bran (being very clear) sixty pound: in which dissolve three pound of Alom: then boil the stuff or cloath in it for two hours: after which take Woad two pounds, and boil it till you see the colour good.

IV. *To make a very good Green Dye.*

First

First Dye the Cloth or Stuff Yellow by the third Section, then put it into the Blew Dye, in the first Section of this Chapter.

V. *To make a pure clear Red Dye.*

Take Liquor or Infusion of Wheat-bran (being strained and made very clear,) sixty pounds, Alom two pounds, Tartar one pound; mix and dissolve them, with which boil the Stuff or Cloath for two hours: take it then out, and boil it in fresh Wheat-bran liquor, sixty pounds; to which put Madder three pounds; perfect the colour at a moderate heat, without boiling.

VI. *To make a very pleasant Purple Dye.*

First Dye it Blew, by the first rule of this Chapter: then boil it in the former Red at the fifth rule hereof: Lastly finish it with a decoction of Brazil.

VII. *To Dye Crimson in Grain.*

First boil it in the Red at the fifth rule of this Chapter; then finish it in a strong tincture of Cochinele made in the Wheat-bran Liquor aforesaid.

VIII. *To make a Bow-dye or Scarlet Colour.*

Take water an hundred pounds; *Cremor Tartari* and *Aqua fortis* of each half a pound; parched pease in powder an hundred: boil all together with the stuff for two hours; this done, take new water an hundred pound weight; *Cremor Tartari* & *Aqua fortis* of each two ounces, in which boil the Stuff or Cloath for a quarter of an hour; then put in the Cochinele, and boil all for about half an hour, and it is done. Where note *that the vessels in which the Stuff and Liquors are boiled must be lined with Tin, else the Colour will be defective.* The same observe in Dying of Silks (in each colour) with this Caution, that you give them a much milder heat, and a longer time.

IX. The Bow-dyers know that dissolved Lime (that is



is the solution of *Jupiter*) being put into a kettle to the *Alom* and *Tartar* makes the *Cloath* attract the Colour into it, so that none of the *Cochenele* is left; but is all drawn out of the water into the *Cloath*.

*The Spirit of Nitre being used with Alom and Tartar, in the first boiling makes a firm ground, so that they shall not spot nor lose their colour by the Sun, Fire, Air, Vinegar, Wine, Urine or Salt-water.*

To enumerate all the great variety of Dyes, or Colours; or offer at an essay to reduce them to a certain method, as it is a labour needless, so it is as altogether impossible, there being infinite Colours to be produced, for which (as yet) we have no certain, known or real name: And out of what we have already enumerated in this Chapter, the ingenious (if they please) shall find (by little practice and Experience) such great variety to be apparent, that should we express the number though but in a very low or mean degree, we could not but be exposed in censure to an Hyperbole even of the highest: Every of the foregoing colours, will alone or singly, produce a great number of others, the first more deep or high; the latter, all of them paler than each other: And according to the variety of colours the matter is of, before it is put into the Dye, such new variety also shall you have again when it comes out; not according to what the Colour naturally gives, but another clean contrary to what you (although an Artist) may expect. For if strange colours be dypt into dyes not natural to them, they produce a forced colour of a new texture, such as cannot possibly be pre-conceived by the mind of man, although long and continued experience might much help in that case. And if such variety may be produced by any one of those single Colours; what number in reason might be the ultimate of any two or three or more of them being

F

complicate

complicate or compounded? Now if such great numbers or varieties may be produced 1. by any one single colour; 2. by being complicate; how should we (without a certain and determinate limitation by denomination or name) ever order such confused, unknown, various, and undeterminate species of things, in any pleasant, intelligible method? Since therefore that the matter (as yet) appears not only hard, but also impossible, we shall commend what we have done to the Ingenuity of the Industrious; and desire that Candor or favour from the experienced, with love to correct our Errors; which act or kindness will not only be a future obligation to the Author, but also enforce Posterity to acknowledge the same.

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FINIS *Libri Tertii.*

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POLY-

# POLYGRAPHICES

## LIBER QUARTUS.

Containing the Original, Advancement and Perfection of the Art of Painting.

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### CHAP. I.

*Of the Original of these Arts.*

**I.** **T**He Original of the Art of *Painting* was taken from the forms of the things which appear ; expressing the same ( as *Isidorus Pelm-siota* saith ) with colours, either hollow or swelling ; dark or light ; hard or soft ; rough or smooth ; new or old.

II. Among all other visible things, Flowers yield the greatest variety of Colours ; which Painters ( as the famous *Pausias* ) have attempted to express ; who was the first that assayed to bring this Art to something of Perfection in that kind.

III. Amongst things invisible, as Thunder, Lightning, and the like ; *Apelles* was the first undertaker : the consideration of these almost impossibilities made *Theophylactus Simocatus* in his seven and thirtieth Epistle say ; that *Painters undertake to express such things, as nature is not able to do.*

For as *Maximus Tyrius* saith, you shall not find in *hast*  
P 2
a body

a body so accurately exact, as to compare it with the beauty of a Statue. And Proclus saith, if you take a man brought forth by nature, and another made by the Art of Carving; that by nature shall not wholly seem statelier; because Art doth many things more exactly: to which Ovid assents, when he saith, that Pygmalion did carve the snow white Image of Ivory with such a happy dexterity, that it was altogether impossible that such a woman should be born.

IV. Now whereas Nature scarcely ever presents any one thing perfect in beauty (in all its parts) lest it should be said that she had nothing more to distribute to others; so Artists of old chose out many patterns of beauty, which were absolutely perfect in some of their parts, that by designing each part after that pattern, which was perfect therein, they might at last present something perfect in the whole.

Wherefore when Zeuxis intended an exquisite pattern of a most beautiful woman he sought not for this perfection in one particular body; but chose five of the most well-favoured virgins; that he might find in them that perfect beauty, which (as Lucian saith) must of necessity be but one.

V. And from this manner of Imitation arises the skill of designing; from whence spring the Arts of Painting, Limning, Washing, Casting, and all others of that kind.

VI. This matter of Imitation was prosecuted in the chief things only;

For who should learn to imitate all things in nature? the greater being attained, the less will follow of themselves; if any shall attempt so great a burthen, two inconveniences, saith Quintilian, will necessarily follow, to wit, always to say too much, and yet never to say all.

VII. The former Imitation is of things seen with the



the eye: there is another, which is the *Idea* of things conceived in the mind, from the continual motion of the Imagination.

Wherefore as *Quintilian* saith (in the third Chapter of the tenth Book of his Institutions of Oratory) "We shall do well to accustom our mind to such a steadfast constancy of Conceiving, as to overcome all other impediments, by the earnestness of our intention: for if we do altogether bend this same intention upon things conceived, our mind shall never take notice of any thing which the eyes see, or the ears hear.

VIII. Those therefore which would profit much, must take care and pains, to furnish their minds with all sorts of useful *Images* and *Idea's*.

"This treasury of the mind, saith *Cassiodorus*, (Cap: 12. de Anima) is not over-loaden in haste. If it be once furnished, the Artist shall find upon any sudden occasion all things necessary, ready at hand; whereas those which are unprovided, shall be to seek: it is like to the Analytical furniture in *Algebra*, without the knowledge of which no notable thing can be performed.

IX. Although the imagination may be easily moved, yet this same excellency is not attained in an instant: without the ability of expressing the conceived Images, all the exercise of the Phancy is worth nothing.

X. The Art of Painting in its Infancy was so mean, that the first Artist was forc'd (as *Ælianus* saith in the tenth Chapter of the tenth Book of his History) in Painting to write, This is an Ox, this is a Horse, this a dog.

But as *Tully* saith (in libro de claris oratoribus) "there is nothing both invented and finished at a time. And *Arnobius* (in libro secundo adversus Gentes) saith, "the Arts are not together with our minds brought forth out of the heavenly places; but are all found out

“ here on earth, and in process of time, softned, for-  
 “ ged, and beautified by a continual meditation: Our  
 “ poor and needy life perceiving some casual things  
 “ to fall out prosperously, whilest it doth imitate, at-  
 “ tempt, try, slip, reform and change, hath out of the  
 “ same assiduous reprehension, made up some small  
 “ sciences of Arts, the which it hath afterwards by  
 “ study brought to some perfection.

XI. The bare learning to imitate is not enough; it is requisite, that since we are not first in invention, we should rather study to out-goe, than to follow.

*If it were altogether unlawful to add any thing to things formerly invented, or to find out better things, our continual labour (saith Quintilian) would be good for nothing. It is certain that Phydias and Apelles have brought many things to light, which their predecessors knew nothing of.*

XII. It is not enough to do all things with the Compleatness of Apelles; but there is requisite also, the inestimable grace of Zeuxis; the indefatigable diligence of Protogenes; the witty subtlety of Timanthes; and the stately magnificence of Nicophanes.

*It is a very good way to have recourse to the excellency of variety of great masters, that something out of the one, and something out of the other, may be as so many Ornaments to adorn our works, and so many steps to lead us on to the door of perfection.*

XIII. Without doubt then there is some perfection of Art to be attained to; and that it is as possible that we, or thou, or he, may aswel attain it, as any body else; if we resolve to strive and take pains, without fainting, or fear of despair.

XIV. The Art of Painting (saith Socrates) is the resemblance of visible things; and therefore the Artift is to beware that he abuses not the liberty of his imagination in the shapes of monstrous and prodigious Images

images of things not known in nature; but as a true lover of Art, prefer a plain and honest work agreeing with nature, before any phantastical and conceited device.

XV. Art is but one only thing: yet there may be incomparable Artists, excellent in one and the same Art, which may almost infinitely differ one from another; yet all alike praise worthy.

"There is but one Art of Casting, in which Myron, Polycletus, Lyfippus, have been excellent, yet did one very much differ from another: and in Painting although Zeuxis, Apelles, Aglaophon, differ very much, yet none of them seems to lack any thing of Art. Zeuxis did surpass all other Artizans, in painting of womens bodies: Apelles had a certain invention and Grace, proper unto himself alone, to which never any other Artificer attained: Lyfippus is most excellent in fine and subtle workmanship: Polycletus made excellent statues upon one Leg: Samius did excell in conceiving of Visions and Phantasies: Dionysius in painting of men only: Polygnotus most rarely expressed the affections and passions of man: Antimachus made noble women: Nicias excellent in painting of women, but most excellent in four-footed creatures, chiefly dogs: Calamis made Chariots drawn with two or four horses; the horses were so exact, that there was no place left for emulation: Euphranor the first and most excellent in expressing the dignity and marks of Heroical persons: Aristodemus painted wrestlers: Serapion was most excellent in Scenes: Pyreicus (inferiour in the Art of Painting to none) painted nothing but Coblers and Barbers: Ludio the first and most excellent in painting Landskips: Apollodorus, Asclepiodorus, Androbulus, A-levas, were the only Painters of Philosophers, &c.

XVI. *Simonides* comparing Painting with Poësie saith, that Picture is a silent Poësie ; and Poësie is a speaking Picture.

Upon the occasion of those words, *Plutarch* saith, " The things represented by Painters as if they were as yet doing, are propounded by Orators as done already : Painters express in colours and lines, what Poets do in words ; the one doth that with the Pen-cil, which the other doth with the Pen. When *Latinus Pacatus* had made a full description of the miserable end of wicked *Maximus*, he calls upon all the Painters to assist him. Bring hither, bring hither, you pious Poets ( saith he ) the whole care and study of your tedious nights ; ye Artificers also despise the vulgar Arguments of antient fables ; these, these things deserve better to be drawn by your cunning hands : let the market places and Temples be filled with such spectacles ; work them out in Ivory ; let them live in colours ; let them stand in Brasse ; let them exceed the price of precious stones. It doth concern the security of all ages, that such things might seem to have been done ; if by chance any one filled with wicked desires or purposes, might drink in Innocence by his eyes, when he shall see ( the horrid and deplorable ) monuments of these our times. And *Gregory Nyssen*, upon the sacrificing of *Isaac*, saith, " I often saw in a picture the Image of this fact, upon which I could not look without tears, so lively did Art put the history before my eyes.

XVII. It is reported that the *Grecians* were the first Painters, and that their colours were ( in the infancy thereof ) only black and white : But it appears more with reason and truth, that the invention thereof should be ascribed to the *Egyptians*, who ( before the invention of Letters ) signified their Conceptions by



by Hieroglyphicks of Figures, Cyphers, Characters, and Pictures of divers things, as birds, beasts, insects, fishes, trees, plants, &c. And by tradition transferred the same to their children.

“So they made the Falcon, to signifie diligence and swiftness: the Bee, a King: its honey, mildness: its sting, justice: a Serpent (tail in mouth) the revolution of the year: the Eagle, envy: the earth, a labouring beast, as an Ox: a Hare, hearing, &c.

XVIII. It appears then, that as the *Ægyptians* were the first inventors thereof; so the *Greeks* brought it (out of its rudeness) to proportion, and the *Romans* at last adorned it with Colours: the *Germans* following them, made their works more durable by painting in Oyl; of whom the *English*, *Dutch*, and *French* are become imitators.

XIX. About the time of *Philip* King of *Macedon*, this Art began to flourish; growing into great estimation in the days of *Alexander* and his successors: from thence, through all the series of times, even to this day, it hath received by degrees, such wonderful advancements, that it may now be said, it is arrived at perfection.

XX. Lastly, that from *Time*, *Form*, *Magnitude*, *Number*, *Proportion*, *Motion*, *Rest*, *Situation*, *Imagination*, *Similitude*, *Distance* and *Light*, in a single and complicate consideration, this Art hath its essence, or being; and at last had, by the help of industrious and unwearied minds, its Original production and manifestation.

“Light is that only thing, without which, all those other things from which this Art springs, would be useless; without which the Art it self cannot be. It is (as *Sandersson* saith) the Heavens Off-spring; the eldest daughter of God; *fiat lux*, the first days creation:  
“it

" it twinkles in a Star ; blazes in a Comet ; dawns in a  
 " Jewel ; dissembles in a Glow-worm ; contracts it  
 " self in a spark ; rages in a flame ; is pale in a candle ;  
 " and dyes in a coal. By it the sight hath being, and  
 " the imagination life, which comprehends the univer-  
 " sality of all things without space of place ; the whole  
 " Heavens in their vast and full extent, enter at once  
 " through the Apple of the eye, without any strait-  
 " nefs of passage : the *Sight* is a sense, which compre-  
 " hends that, which no other sense is capable of: it judg-  
 " eth and distinguisheth between two contraries in an  
 " instant ; it considers the excellency and beauty of e-  
 " very object ; the spangled Canopy of Heaven by  
 " night ; the wandering cloud by day ; the wonder-  
 " ful form of the rainbow ; the glorious matutine ap-  
 " pearance of *Phœbus* ; his meridional exaltation ;  
 " the golden rays which surround him ; the mutability  
 " of his shadows ; his Vespertine setting ; the lofty  
 " tops of mountains ; unaccessible and ridgy rocks ;  
 " profound valleys ; large plains, which seem to meet  
 " Heaven ; green trees and pleasant groves ; delightful  
 " hills ; sweet and flowery meadows ; pleasant  
 " streams ; springing fountains ; flowing rivers ; stately  
 " Cities ; famous Towers ; large bridges ; magnificent  
 " buildings ; fruitful Orchards and Gardens ; shapes of  
 " living Creatures, from the Elephant to the Ant, from  
 " the Eagle to the Wren, and from the Whale to the  
 " Shrimp ; the wonderful form of Insects ; the marching  
 " of Armies ; the besieging and storming of Garisons ;  
 " the insolencies of rude people ; the flight of the di-  
 " stressed ; the desolations and depopulations of King-  
 " doms and Countries ; the sailing of Ships ; terrible  
 " Sea-fights ; great beauty of Colours , together with  
 " thousands of other things ; all which it digests, and  
 " marshals in ample order, that when occasion may  
 " be

“be, it may exert its store, for the benefit, advancement, and perfection of Art.

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C H A P. II.

*Of a Picture in general.*

I. IN every Picture there are always four principal considerations : to wit, 1. *Invention*, 2. *Proportion*, 3. *Colour*, and 4. *Life*.

II. *Invention* must be free, and flow from a general knowledge of Antiquities, History, Poetical fictions, Geometrical conclusions, and Optical considerations ; according to its Situation or Aspect, either near or far off.

III. And this *Invention* must express proper and fit things, agreeing to the Circumstances of *Time*, *Place*, *Matter*, and *Person* ; and having respect to the modes of habits belonging to the Country or People whether *Antient* or *Modern*.

IV. *Proportion*, *Analogy*, or *Symmetry* ( which you please ) in that which limits each part to its proper bigness, in respect to the whole :

*Whatsoever differs from this recedes from beauty, and may be called Deformity.*

V. This *Proportion* is called by Artists the designing lines ; which are first drawn before the whole is painted.

*These proportions or lineal designs, draughts, and scotches, may be called Picture, which being well done, shew not only the shape, but also the intent : In lines only, we may draw the Proportion of a Black More, and such as shall be like him ; Now this Skill proceeds from the very highest principles of Art.*

VI. *Colour*

VI. *Colour* is that which makes the Picture resemble what we desire to imitate; by mixing of various Colours together.

VII. In making any thing apparent, it is necessary to express its opposite or contrary.

*So light and shadows forward, set forth Paintings outwards, as if you might take hold of them with your hand: blackness makes things seem farther off, and is used in things hollow, as Caves, Wells, &c. the more deep, the more black.*

VIII. Brightness exceeds light, sparkling in splendor.

*It is used in the Glory of Angels; twinkling of Gems, Armour, Gold and Silver vessels, fires and flames.*

IX. In Painting of a man, grace each limb with its proper and lively Colour; the black make sincerely black; the white, pure, with redness intermixt. But to paint purely the exquisite beauty of a woman, is never to be well done (except it be by a very ingenious Artist indeed) her rare complexion being scarcely possible to be imitated with Colours: *There is none really knows the exact mixture for such a Countenance.*

X. Life or Motion is that from whence action or passion doth result, which in coloured pictures is seen with a lively force of Gesture and Spirit.

*To do this it is necessary that the Artist be well acquainted with the nature, manners, and behaviour of men and women, as in anger, sadness, joy, earnestness, idleness, love, envy, fear, hope, despair, &c. Every disturbance of the mind alters the Countenance into several postures.*

XI. The head cast down shews humility; cast back, arrogancy or scorn; hanging on the neck, languishing; stiff and sturdy, morosity of mind: the various postures of the head shew the passions; the Countenance the same; the eyes the like: and in a word, all the other



ther parts of the body contribute something to the expression of the said passions of the mind, as is easily to be observed in the life.

*In excellent pieces you may at a view read the mind of the Artist in the formality of the Storie.*

XII. Lastly, Be always sure first to conceive that in your thoughts, which you would express in your work; that your endeavours being assisted by an intellectual energie, or power of operation, may at length render your productions perfect.

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CHAP. III.

*Of the Choice of Copies, or Patterns.*

I. **H**E that chuseth a Pattern, ought to see 1. that it be well designed: 2. that it be well coloured.

II. In the well designing, be sure that it be true in every part; and that the proportion of the figure be just and correspond to the life.

III. If the picture be a fiction, see that it be done boldly, not only to exceed the work (but also the possibility) of nature, as in *Centauris, Satyrs, Syrens, Flying-horses, Sea-horses, Tritons, Nereides, &c.*

Alexander ab Alexandria saith that Theodore Gaza caught one of these Nereides in Greece, and that in Zealand, another was taught to spin: these Tritons and Nereides are these which are called Mermaids, the Male and the Female.

IV. Natural figures shew property, and are required to agree with the life: forced Figures express novelty, and are to be beautified by exorbitancies according

according to the fancy of the Painter without limitation : novelty causes admiration, and admiration curiosity, a kind of delight and satisfaction to the mind.

*These things are not the products of stupid brains, nor are they contained within the perimetre of clouded and dull Conceptions.*

V. In the well colouring, know that in obscurity or darkness there is a kind of deepness; the light being sweetly deceived *gradatim* in breaking the Colours, by insensible change from the more high to the more dull.

*In the Rain-bow this mixture is perfect; the variety of Colours are thoroughly dispers'd ( like Atoms in the Sun-beams ) among one another, to create its just appearance.*

VI. See that the swellings of the work agree with the exactness of nature, and as the parts thereof require, without sharpness in out-lines, or flatness within the body of the piece; as also that each hollowness exactly correspond in due proportions.

VII. Lastly, View precisely the passions, as Joy, Sorrow, Love, Hatred, Fear, Hope, &c. and see that they correspond with their proper postures: for a touch of the pencil may strangely alter a passion to its just opposite or contrary, as from Mirth to Mourning, &c.

CHAP. IV.

Of the Disposing of Pictures and  
Paintings.

I. **A** Ntique works, or *Grotesco*, may become a wall, the borders and freezes of other works; but if there be any draughts in figures of men and women to the life upon the wall, they will be best of black and white; or of one colour heightned: if they be naked, let them be as large as the place will afford; if of Marbles, Columns, Aquæducts, Arches, Ruines, Cataracts, let them be bold, high, and of large proportion.

II. Let the best pieces be placed to be seen with single lights, for so the shadows fall natural, being always fitted to answer one light; and the more under or below the light the better, especially in mens faces and large pieces.

III. Let the *Porch* or entrance into the house, be set out with *Rustick* figures, and things rural.

IV. Let the *Hall* be adorned with Shepherds, Peasants, Milk-maids, Neat-herds, Flocks of Sheep and the like, in their respective places and proper attendants; as also Fouls, Fish, and the like.

V. Let the *Stair-case* be set off with some admirable monument or building, either new or ruinous, to be seen and observed at a view passing up: and let the *Ceiling* over the top-stair be put with figures fore-shortened looking downwards out of Clouds, with Garlands and Cornucopia's.

VI. Let *Landships*, Hunting, Fishing, Fowling, Histories and Antiquities be put in the Great Chamber.

VII. In

VII. In the *Dining-room* let be placed the pictures of the King and Queen; or their Coat of Arms; forbearing to put any other Pictures of the life, as not being worthy to be their Companions; unless at the lower end, two or three of the chief nobility, as attendants of their Royal persons: for want hereof you may put in place, some few of the nearest blood.

VIII. In the *inward or with-drawing chambers*, put other draughts of the life, of persons of Honour, intimate or special friends, and acquaintance, or of Artists only.

IX. In *Banqueting-rooms*, put cheerful and merry Paintings, as of *Bacchus*, Centaures, Satyrs, Syrens, and the like, but forbearing all obscene Pictures.

X. Histories, grave stories, and the best works become *Galleries*; where any one may walk, and exercise their senses, in viewing, examining, delighting, judging and censuring.

XI. In *Summer-houses* and *Stone-walks*, put Castles, Churches, or some fair building: In *Terraces*, put Boscage, and wild works: Upon *Chimney-pieces*, put only Landskips, for they chiefly adorn.

XII. And in the *Bed-chamber*, put your own, your wives and childrens pictures; as only becoming the most private Room, and your Modesty: lest (if your wife be a beauty) some wanton and libidinous guest should gaze too long on them, and commend the work for her sake.

XIII. In hanging of your Pictures; if they hang high above reach, let them bend somewhat forward at the top; because otherwise it is observed that the visual beams of the Eye, extending to the top of the Picture, appear further off, than those at the foot.



C H A P. V.

*Of Painting in General.*

I. **T**He Art of *Painting* ( which is the imitation of nature ) consists in three things, to wit, *Design*, *Proportion* and *Colour*: all which are express'd in three sorts of *Painting*, viz. *Landskip*, *History*, and *Life*.

II. *Landskip* or perspective, wonderfully respects freedom and liberty, to draw even what you please. *History* respects proportion and figure: *Life* respects colour: In each of which there is a necessary dependency of all the other...

III. The work of the Painter is to express the exact imitation of natural things; wherein you are to observe the excellencies and beauties of the piece, but to refuse its vices.

For a piece of *Painting* may in some part want *Diligence*, *Boldness*, *Sublety*, *Grace*, *Magnificence*, &c., while it is sufficiently in other parts excellent; and therefore you are not so much to imitate *Ornaments*, as to express the inward power and strength.

IV. In *Imitation*, always be sure to follow the examples and patterns of the best masters; lest evil precedents beget in you an evil habit.

V. The force of *Imitation* resides in the fancy or imagination, where we conceive ( what we have seen ) the form or *Ideas* of that, or those things which we would represent in lines and colours.

VI. This *Fancy* or *Imagination* is strengthened, by lodging therein all variety of visible rarities; as forms made by light and darkness; such as are to be seen in Summer in the clouds, near Sun-setting ( which  
vanish

vanish before they can be imitated : ) 2. Forms made by proximity or distance of place, such as are Trees, Woods, Buildings, appearing perfect being near, or confused in their parts being far off: 3. Forms of dreams, of which ( whether sleeping or waking ) the fancy must be fully possess'd.

VII. Where *Design* is required ; you must fancy every circumstance of the matter in hand, that in an instant, with a nimble hand, you may depict the same with liveliness and Grace.

*Slow performance causes a perturbation in the fancy, cooling of the mind, and destruction of that passion which should carry the work on : but quickness and diligence brings forth things even excellent indeed : Care, Industry and Exercise are the props, supporters and upholders of Art.*

VIII. Be sure you dwell not too long upon designing : alter not what is well, lest for want of exquisite judgement you make it worse : and if in designing you want that ability to follow the quickness of fancy, submit to a willing negligence ; a careless operation adds sometimes such a singular grace, as by too much curiosity would have been totally lost ; then by reviewing what is done, make a *regular connexion of all the Ideas's conceived in your mind.*

IX. With *Apelles* amend those things which others justly find fault with ; the reprehensions of an Artist are as demonstrative rules of experience ; and weigh every ones opinion for the advancement of Art.

X. Lastly, be sure your Piece be of a good *Design, History, or Life* ; that the parts be well *disposed* ; the Characters of Persons, *proper* ; the form *magnificent* ; the colour *lively* ; and the spirit *bold* : that it may appear to be the work of a nimble fancy, ready memory, clear judgment, and large experience.

## CHAP. VI.

## Of Colours.

I. **O** Ker is a good colour, and much in use for shadows, in pictures of the life, both for hair and drapery : In Landskips it is used for Rocks and high wayes.

II. *Pink* the fairest, with blew, makes the fastest greens for Landskip and Drapery.

Sap green and green bise are good in their kind ; but the first is so transparent and thin, the other of so course and gross body, that in many things they will be useless, especially where a beautiful green ( made of Pink and bise mixed with Indico ) is required.

III. *Umber* is a greasie foul colour ; but being calcined and ground, it works sharp and neat.

IV. *Spanish Brown* is exceeding course and full of gravel ; being prepared, it is used for a mixture made of red lead mixt with a little Umber, which makes the same colour.

V. *Collens earib* or *Terra Lemnia*, it is used to close up the last and deepest touches, in the shadows of pictures of the life, and in Landskips ; use it when new ground.

VI. *Cherry-stone black*, is very good for drapery and black apparel : mixt with Indico, it is excellent for Sattin ; it appears more beautiful or shining if mixed with a little white : if deepened with Ivory black, in hard reflexions, and strong deep touches, it is wonderful fair.

VII. *Ivory black*, it serves for a deep black, but is not easie to work without it be well tempered with Sugar-candy, to prevent peeling.

Q 2

VIII.

VIII. *Red lead* well wash'd, is a glorious colour, for those peices which require an exquisite redness.

IX. *Indian Lake*, is the dearest and most beautiful of all reds; it is to be ground as white lead, and mixt with a little white Sugar-candy and fair water, till the Colour and Sugar-candy be thoroughly dissolved, which being dry will lie very fast, without danger of cracking or peeling.

## CHAP. VII.

### *Of making Original Colours.*

#### I. *To make White Lead.*

Put into an earthen pot several plates of fine lead, cover them with white-wine vinegar, covering the top of the pot close with clay, bury it in a Cellar for seven or eight weeks, and you will have good white lead upon the plates, which wipe off.

#### II. *To make Verdigrise.*

This is made by hanging plates of Copper over the fumes of *Aqua fortis* or spirit of Nitre: or by dipping them in the same, or in Vinegar.

#### III. *To make an Emerald Colour.*

Take Verdigrise in fine powder, which temper with Varnish, and lay it upon a ground of liquid silver burnish'd, and you have a fair Emerald.

#### IV. *To make a Ruby Colour.*

Mix the same with Florence lake, and you shall have a very fair Ruby colour.

#### V. *To make a Saphyre Colour.*

The same, viz. Verdigrise mixt with *Ultramarine*, makes a glorious Saphyre.

VI. *To*



*VI. To make a Crimson Velvet.*

Take Turnsoil and mix it with Indico lake ( well ground with Gum and Sugar-candy ) lay it full, and when it is wet, wipe away the colour with a dry pensil, where you would have the heightening of the Crimson velvet appear, and the stronger reflections will be well expressed.

*VII. To make a silver black.*

Take fine Silver filings or plates, which dissolve in spirit of Nitre or Aqua fortis, and evaporate to dryness, or precipitate with Oleo Sulphuris or Salt water, and you shall have a snow white precipitate, which mixt with water makes the best black in the world, to dye all manner of Hair, Horns, Bones, Wood, Metals, &c.

*VIII. To make a Murry or Amethyst.*

It is made of Indian Lake ground with Gum Arabick water only.

*IX. To make a Red or Ruby for Limning.*

It is made of Indian lake ( which breaks off a scarlet colour ) ground with Gum water and Sugar-candy.

*X. To make Azure blew, or Saphyre.*

It is made of *Ultramarine of Venice* ( which is best ) the best blew smalt, or blew bise, ground with Gum water only : you may make good shadowing blews of Indico Flory and Litmoss, all which need no washing, nor Litmoss no grinding, but only infused in a Lixivium of Soap-ashes.

*XI. To make a green or Emerald.*

It is made of Cedar green : in place whereof, take tripal to draw with : Pink is good also for Landskips, mixed with Bise ashes ; as also with Matticot and Ceruse.

*XII. To make a yellow or Topaz.*

It is made of Matticot which is the best, of which there

there is divers sorts, viz. deeper and paler: yellow Oker also for want of better may do. Shadow Masticot with yellow oker; deepen it with Oker de rouse.

XIII. *To make Ultramarine.*

Take the deepest coloured Lapis Lazuli (having few veins of Gold upon it) heat it red hot in a Crucible close covered, then quench it in Urine, Vinegar or water, in a leaded earthen pot dry it well, then with a pair of pinfers nip off the hard, gray, and whitish part from it, and grind the remainder with honied water as fine as may be, then dry it for use. The honied water is made of water a quart, boiled with honey two spoonfuls.

C H A P. VIII.

*Of Limning to the life in general.*

I. **L**et the table be prepared very exact by the fifth rule of the twenty third Chapter of the second Book.

II. Let the ground be of flesh colour, tempering it according to the complexion to be painted.

III. If it be a fair complexion, mix a good quantity of red and white Lead together somewhat thick.

IV. If swarthy or brown, mix with the former a little fine Masticot or English Oker, or both, always observing that your ground be fairer than the complexion painted.

*For fairness may be shadowed or darkened at pleasure; but if it be sad or dark, you can never heighten it, for in Limning the picture is alwayes wrought down to its exact colour.*

V. Lay

V. Lay the ground upon the card or tablet, with a larger pencil than ordinary, free from spots, scratches of the pencil, or dust, and as even as possible may be; and let the colour be rather thin and waterish than too thick, doing it very quick and nimbly with two or three dashes of the pencil.

VI. This done prepare your shadows in order, by the seventh rule of the four and twentieth Chapter of the second Book.

VII. Then draw the out-lines of the face with lake and white mingled together very fine; so that if you should mistake in your first draught, you may with a strong stroke draw it true, the other line by reason of its faintness being no hinderance.

*These lines must be truly drawn, sharp and neat, with the greatest exactness imaginable.*

VIII. Observe the most remarkable and deep shadows, to keep in memory when you go over them with more exactness; drawing out also (if you so please) the shape of that part of the body next adjoining to the face, viz. a little beneath the shoulders, with a strong and dark colour, which in case of mistake in proportion may easily be altered.

IX. The first sitting is to dead colour the face: the second sitting is the exact colouring and observation of the several shadows, graces, beauties or deformities, as they are in nature: the third sitting is in making smooth what was before rough and rude; clothing what was naked, and giving strong and deepning touches to every respective shadow.

X. The dead colour is thus made.

*Take of the aforesaid ground (at the third or fourth Section of this Chapter) and mix it with fine red lead, tempering it exactly to a dead colour of the cheeks and lips, having a great care, that you make it not too deep; which if light, you may do at pleasure.*

XI. The face is first begun to be coloured in the reds of the cheeks and lips, and somewhat strongly in the bottom of the chin (if beardless) also over, under, and about the eyes with a faint redness.

XII. The ear is most commonly reddish, as also sometimes the roots of the hair.

XIII. The ground being wash'd over with this reddish or dead colour, let the shadows be as well bold and strong, as exact and curious.

*A good picture, if but dead coloured only, and seeming near hand very rough, uneven and unpleasant, yet being boldly and strongly done and shadowed, will appear very smooth, delicate, and neat if but viewed at a distance from the eye. Therefore curiosity and neatness of Colour, is not so much to be regarded, as bold, lofty, and strong expressing what is seen in the life.*

XIV. The next thing to be done is the use of the faint blews, about the corners and balls of the eyes and temples, which you must work out exceeding sweetly, and faint by degrees.

XV. Always be sure to make the hard shadows fall in the dark side of the face, under the nose, chin, and eyebrows, as the light falls, with somewhat strong touches.

XVI. The light shadows being done and smoothed, work the hair into such forms, curlings, and dispositions as best adorn the piece.

*First draw it with colours, neatly and to the life; then wash it roughly as the rest; and the next time perfect it: filling up the empty places with colour, and the partings thereof with blew.*

XVII. And ever remember, when you would have your colours or shadows deep, strong, and bold; that you do them by degrees, beginning faintly, and then encreasing the same.

XVIII. First



XVIII. First, use the former colours in the same places again, driving and sweetning them into one another, that no part may look uneven, or with an edge, or patch of colour, but altogether equally mixt and dispersed, lying soft and smooth, like smoak or vapours.

XIX. Secondly, This work being done for an hour or two, lay the ground for behind the picture of blew, or crimson, like to a sattin or velvet curtain.

XX. If blew, let it be done with Bise well tempered in a shell: First draw the out lines with the same colour, with a small pencil: then with a thin and waterish blew wash over the whole ground with a larger pencil: lastly, with thicker colour cover the same which you before wash'd, swiftly, that it dry not before all be covered, so will it lye smooth and even.

XXI. If Crimson, work with Indian lake, in those places where the strong lights, and high reflexions fall: let the light be done with thin and waterish lake; the deepning and strong shadows, close by the light with thicker colour: this done, the picture will be much changed; the beauty of these grounds will much darken and dead it.

XXII. Let the apparel with suitable colours be done only flat with heightning or deepning; and then go over the face again, reducing the shadows to smoothness and neatness with a sharp and curious pencil: drawing the eyes; the lines of the eye-lids; redness of the nostrils; shadow of the ears; deepness of the eye-brows, and those other more remarkable marks of the face: so sweetning the out-lines of the face (by darkning the ground, above from the light side, and below on the dark side) that when the work is done, the ground may stand as it were at a distance from the face behind; and the face may seem to stand off forward from the ground.

XXIII. Then

XXIII. Then go over the hair, making it light or deep by the life: and in Apparel make the several folds and shadows, and what else is to be imitated, as it is in the life it self; lightning the lines with the purest white, a little yellow, and some blew; and deepning with Ivory black; and heightning with black mixed with a little lake or Indico.

XXIV. This done, and the person gone, your work being yet rough, by your self polish it, and strive to make it smooth and pleasant, filling up the empty places, and sweetning the shadows, which yet lye uneven and hard.

XXV. The Apparel, hair, and ground being finished, now give strong touches for the rounding of the face; and observe whatsoever may conduce to likeness and resemblance, as moles, smilings, or glancings of the eyes, motion of the mouth, &c. for which purpose, you may find an occasion of discourse, or cause the person to be in action, and to look merrily and chearfully.

XXVI. Lastly conclude, that the eye gives the life; the nose the favour; the mouth the likeness; and the chin the grace.

XXVII. In fair coloured drapery, if the lightning be done with fine shell gold, it will add a most wonderful lustre, and be a singular ornament to your work; and if this gold be mixt with the very ground it self, the apparel will appear much the fairer.

C H A P. IX.

*Of Limning Landskip.*

**I.** *TO make the Tablet for Landskip.*

*Take a piece of Vellum, and share it thin upon a frame, fastning it with past or glew, and pasting it upon a board; and this manner of tablets are altogether used in Italy for Landskip, and History.*

II. If you draw a Land-skip from the life, take your station from the rise of ground, or top of an hill, where you shall have a large Horizon, marking your tablet into three divisions downwards, from the top to the bottom: then your face being directly opposed to the midst of the finitor, keeping your body fixed, depict what is directly before your eyes, upon your tablet, on your middle division, then turning your head (not your body) to the right hand, depict what is there to be seen: adjoining it to the former. *In like manner doing by that which is to be seen on the left hand, your Landskip will be compleated.*

III. Make every thing exact, not only in respect of distance, proportion and colour; but also in respect of form, as if there be *Hills, Dales, Rocks, Mountains, Cataracts, Ruines, Aqueducts, Towns, Cities, Castles, Fortifications, or whatsoever else may present it self to view*; making always a fair sky, to be seen afar off; letting your light always descend from the left hand to the right.

IV. In beginning your work, first begin with a large sky; and if there be any shining or reflexion of the Sun, beware you mix no red lead in the purple of the sky, or clouds, but only with lake and white: the  
yellow

yellow and whitish beams of Sol work with Masticot and white.

V. Then with a fresh or clean pencil finish the blewish sky, and clouds, with smalt only: at the first working, dead all the work over, with colours suitable to the Air, green meadows, trees, and ground, laying them somewhat smooth, not very curiously, but slightly and hastily; make a large sky, which work down in the Horizon, faintly, but fair; and drawing nearer to the earth, let the remote mountains appear sweet and misty, almost indistinguishable, joining with the clouds, and as it were lost in the Air.

VI. The next ground colour downwards must encrease in magnitude of reason, as nearer the eyes, somewhat blewish or Sea-green: but drawing towards the first ground, let them decline into a reddish or popinjay green: the last ground colour, must be nearest the colour of the earth, *viz.* a dark yellow, brown and green; with which, or some colour near it, you must make your first trees; making them, as they come near in distance, to encrease proportionably in colour and magnitude, with great judgment: the leaves flowing and falling one with another, some apparent, others lost in shadow.

VII. Let your Landskip lye low, and as it were under the eye (which is most graceful and natural) with a large and full skie not rising high, and lifting it self into the top of the piece, as some have done.

VIII. Be sure to make your shadows fall all one way, *viz.* to make light against darkness, and darkness against light; thereby extending the prospect, and making it to shew as afar off; by losing its force and vigour, by the remoteness from the eye.

IX. In touching the trees, boughs, and branches, put all the dark shadows first, raising the lighter leaves  
above



above the darker, by adding Masticot to the dark green, which may be made with Bise, Pink and Indico: the uppermost of all, exprest last of all, by lightly touching the exterior edges of some of the former leaves, with a little green, Masticot, and white: the darkest shadows you may set off with sap green and Indico.

X. Trees and their leaves, Rivers, and Mountains far distant, you must strive to exprest with a certain real softness and delicateness: in making Cataracts, great falls of water, and rocks, you must first lay a full ground near the colour, then with a stronger in the dark places, and slight heightning in the light; remarking all disproportions, cracks, ruptures and various representations of infinitely differing matters; the manner whereof is abundantly exprest, in almost every Land-skip.

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C H A P. X.

*Of the various Forms or Degrees of Colouring.*

I. **T**Here are four various forms or degrees of colouring, *viz.* 1. Of *Infants*, or Children: 2. Of *Virgins* or fair Women: 3. *Naked* bodies: 5. *Old* or aged bodies.

II. *Infants* or young children are to be painted of a soft and delicate complexion; the skin and ears of a ruddy and pleasant colour, almost transparent; which may be done with white lead, lake, and a little red lead; shadowing it thin, faint, and soft; letting the  
Cheeks,

Cheeks, Lips, Chin, Fingers, Knees and Toes be more ruddy than other parts; making all their Linnen very fine, thin, and transparent, or perspicuous, with strong touches in the thickest folds.

III. *Virgins and fair Women* are as curiously to be express'd as the former, but their Muscles are to be more apparent, their shape more perfect; and their shadows to be of a whitish yellow, blewish, and in some places almost purple; but the most perfect and exquisite direction is the life, which ought rather to be followed than any thing delivered by rule.

IV. *Naked bodies* are to be painted strong, lively, and accurate; exactly matching the respective pairs of Muscles and Nerves, fixing each Artery in its due and proper place, giving each limb its proper motion form and scituation, with its true and natural colour; all which to do well may be the study and practice of almost ones whole life.

V. *Old or aged Bodies* ought to be eminent for exact and curious shadows, which may be made of Pink, lake, and Ivory black, which make notable shadows, in appearance like the wrinkles and furrows of the face and hand in extreme old age: let the eyes be dark, the aspect melancholy, the hair white (or else the pate bald) and all the remarks of Antiquity or age be very apparent and formidable.

VI. But notwithstanding all the foregoing rules, the posture or form of standing, and being either of the whole body, or any of its parts, ought diligently to be observed, that the life may be imitated, in which, it only lyes in the breast and judgment of the Painter to set it off with such various colours, as may best besit the respective complexion and accidental shadows of each accidental position or posture, which are sometimes more pale, sometimes more ruddy; sometimes more faint, sometimes more lively.

CHAP.

C H A P. X I.

*Of Frescoe, or Painting of Walls.*

I. **I**N Painting upon Walls, to make it endure the weather, you must grind your colours with Lime water, Milk, or Whey, mixt in size colouring pots.

II. The paste or plaister must be made of well wash'd lime, mixt with fine powder of old rubbish stones: the lime must be so often wash'd, till all its salt is abstracted; and all your work must be done, in clear and dry weather.

III. To make the work endure, strike into the wall stumps of headed nails, about five or six inches asunder, and by this means you may preserve the plaister from peeling.

IV. Then with this paste, plaister the wall, a pretty thickness, letting it dry: being dry, plaister it over again, about the thickness of half a barley corn, very fine and smooth, then your colours being ready prepared, work this last plaistering over, whilest it is wet, so will your Painting unite and join fast to the plaister, and dry together as a perfect compost.

V. In painting be nimble and free, let your work be bold and strong, but be sure to be exact, for there can be no alteration after the first painting; and therefore heighten your paint enough at first, you may deepen at pleasure.

VI. All earthy colours are best, as the Okers, Spanish white, Spanish brown, Terra Veta, and the like; mineral colours are naught.

VII. Lastly, let your pencils and brushes be long and soft, otherwise your work will not be smooth; let  
your

your colours be full, and flow freely from the pencil or brush; and let your design be perfect at first; for in this, there is no after alteration to be made.

## CHAP. XII.

*How the Antients depicted their Gods, and first of Saturn.*

“IN Chap. 18. and 19. lib. 1. and ch<sup>ap</sup>. 12. and 13. lib. 3. we have something concisely handled this matter; but because we have been there exceeding brief, & that what we have there delivered is too strict for ordinary use or practice, being indeed only the preparative or foundation for a larger work; we intend here in this fourth part to prosecute the same, in such sort, as to comprehend the various ways of the antients in depicting their Idols, according to the customs of those several nations, where they were adored and worshipped, and that from most of the ancient, chiefest and best approved Authors now extant.

I. The ancient *Romans* figured *Saturn* like an old man, with a Sythe or hook in his hand, by some signifying time, as his name *Chronos* also intimates.

II. They also figured him in the shape of a very aged man, as one who began with the beginning of the world, holding in his hand a child, which by piece meals he seems greedily to devour.

“By this is signified the revenge he took, for being expelled Heaven by his own children; of which those which escaped his fury, were only four, *Jupiter*, *Juno*, *Pluto*, and *Neptune*; by which is shadowed forth the four Elements, Fire, Air, Earth, and Water, which



" which are not perishable by the all cutting sickle of  
" devouring time.

III. *Martianus Capella* depicts him an old man, holding in his right hand a Serpent, with the end of its tail in its mouth, turning round with a very slow pace, his temples girt with a green wreath, and the hair of his head and beard milk white.

" The wreath on his head shews the Spring time; his  
" snowy hair and beard, the approach of churlish winter; the slowness of the Serpents motion, the sluggish revolution of that Planet.

IV. *Macrobius* describes him with a Lions head, a Dogs head, and a Wolfs head.

" By the Lions head is signified the time present,  
" ( which is alwayes strongest, for that which is, must  
" needs be more powerful than that which is not: )  
" by the dogs head, the time to come, ( which always  
" fawns on us, and by whose alluring delights we are  
" drawn on to vain and uncertain hopes: ) and by the  
" wolfs head, time past, ( which greedily devoureth  
" whatever it finds, leaving no memory thereof behind.

V. *Maerbius* also saith that among the rest of his descriptions, his feet are tyed together with threds of Wool.

" By which is shewed, that God does nothing in haste;  
" nor speedily castigates the iniquities of man, but proceeds slowly and unwillingly, to give them time and  
" leisure to amend.

VI. *Eusebius* saith, that *Astarte* ( the daughter of *Caelum*, wife and sister of *Saturn* ) did place also upon his head two wings, demonstrating by the one, the excellency and perfection of the mind; by the other, the force of sense and understanding.

" The Platonicks understand by *Saturn* the mind, and  
" its

“ its inward contemplation of things coelestial, and  
 “ therefore called the time in which he lived, the golden  
 “ Age, it being replete with quietness, concord, and true  
 “ content.

## CHAP. XIII.

### *How the Antients depicted Jupiter.*

I. **O** *Raphael* describes him with golden locks, having on his temples peeping forth, two golden horns, his eyes shining, his breast large and fair, having on his shoulders, wings.

“ By the golden locks is signified the Firmament,  
 “ and its glorious army of tralucēt Stars: by his  
 “ two horns, the *East* and *West*: by his eyes, the Sun  
 “ and Moon: by his breast, the spacious ambulation of  
 “ the air; and by his wings the fury of the winds.

II. *Porphyrus* and *Suida* depicture the Image of *Jupiter* sitting upon a firm and immoveable seat; the upper parts naked and uncloathed, the lower parts covered and invested; in his left hand a Scepter; in his right hand a great Eagle, joined with the figure of *Victoria*.

“ This Image was erected in *Piræus*, a stately and  
 “ magnificent gate of *Athens*: by the seat is shewed the  
 “ permanency of Gods power: the naked parts shew  
 “ that the compassion of the Divine power is always  
 “ manifest to those of an understanding Spirit: the low-  
 “ er parts covered, shew that while we wallow in the  
 “ world, and as it were rock’d asleep with the illece-  
 “ brous blandishments thereof, that the divine know-  
 “ ledge is hid and obscured from us: by the Scepter is  
 “ signified

“ signified his rule over all things : by the Eagle and  
 “ *Victoria* how all things stand in vassalage and subje-  
 “ ction to the all commanding power.

III. *Martianus* depicts him with a regal crown,  
 adorned with most precious and glittering stones ; over  
 his shoulders, a thin vail ( made by *Pallas* own hands )  
 all white, in which is inserted divers small pieces of glass  
 representing the most resplendent Stars ; in his right  
 hand he holdeth two balls, the one all of gold , the o-  
 ther half gold, half Silver ; in the other hand an Ivory  
 Harp with nine strings, sitting on a foot-cloth, wrought  
 with strange works, and Peacocks feathers ; and near  
 his side lyeth a tridental gold embossed mass.

IV. *Plutarch* saith that in *Crete*, he had wholly hu-  
 mane shape and proportion, but without ears.

“ By that was signified that Superiours and Judges  
 “ ought not to be carried away by prejudice nor per-  
 “ swasion, but stand firm, steadfast and upright to all  
 “ without partiality.

V. Contrariwise the *Lacedemonians* framed his pi-  
 cture with four ears.

“ By that they signified that God heareth and un-  
 “ derstandeth all things ; and that Princes and Judges  
 “ ought to hear all informations , before they deliver  
 “ definitive sentence or judgment.

VI. *Pausanias* saith that in the temple of *Minerva*  
 ( among the *Argives* ) the statue of *Jupiter* was made  
 with three eyes ; two of them in their right places ;  
 the other in the middle of his fore-head.

“ By which is signified his three Kingdoms, the one  
 “ Heaven ; the other earth ; the last Sea.

VII. With the *Eleans* ( a people of *Greece* ) the Sta-  
 tue of *Jove* was compacted of Gold and Ivory, em-  
 paled with a Coronet of Olive leaves ; in his right  
 hand the Image of *Victoria* ; in his left a Scepter, on

the top of which was mounted the portraiture of an Eagle, upon a seat of Gold, enchased with the forms of many unknown birds and fishes, upheld and supported by four Images of *Victoria*.

VIII. In *Caria* (a place of the lesser *Asia*) the Statue of *Jupiter* was made holding in one of his hands a pole axe.

"The reason of this was, as *Plutarch* saith, from "*Hercules*, who overthrowing *Hippolyta* the Amazonian Queen, took it from her, and gave it to *Omphale* his wife a *Lydian*. The *Platonists* understand by "*Jupiter*, the soul of the world; and that divine spirit, "through whose Almighty Power, every thing receives "its being and preservation.

#### C H A P. XIV.

##### *How the Antients depicted Mars.*

I. **M** *Acrobins* saith that the Pictures of *Mars* were adorned and beautified with the Sun-beams, in as lively a manner as could be devised; with an Aspect fierce, terrible, and wrathful, hollow red eyes, quick in their motion, face all hairy with long curled locks on his head, depending even to his shoulders of a coal black colour, standing with a spear in the one hand, and a whip in the other.

II. He is also sometimes depicted on horse-back and sometimes in a Chariot, drawn with horses called *Fear* and *Horror*: some say the Chariot was drawn with two men, which were called *Fury* and *Violence*.

III. *Statius* saith he wore on his head a helmet most bright and shining, so fiery as it seemed, there issued  
 flashes



flashes of lightning; a breast plate of Gold, insculp'd with fierce and ugly Monsters; his shield depainted all over with blood, enchased with deformed beasts, with a spear and whip in his hands, drawn in a Chariot with two horses, *Fury* and *Violence*, driven with two churlish coach-men, *Wrath* and *Destruction*.

IV. *Isidorus* saith that the Picture of *Mars* was depainted with a naked breast.

"By which is signified that men ought not to be timorous in warr, but valiantly and boldly expose themselves to hazards and dangers.

V. *Statius* saith that the house of *Mars* was built in an obscure corner of *Thracia*, made of rusty, black Iron; the Porters which kept the gates were *Horror* and *Madness*; within the house inhabited *Fury*, *Wrath*, *Impiety*, *Fear*, *Treason* and *Violence*, whose governess was *Discord*, seated in a regal throne, holding in one hand a bright sword, in the other a basin full of humane blood.

VI. *Ariosto*, describing the Court of *Mars* saith, that in every part and corner of the same were heard most strange Ecchoes, fearful shrieks, threatnings, and dismal cries; in the midst of this palace was the Image of *Vertue*, looking sad and pensive, full of sorrow, discontent and melancholy, leaning her head on her arm: hard by her was seated in a chair *Fury* in triumph: not far from her sat *Death*, with a bloody stern countenance, offering upon an Altar in mens skulls, humane blood, consecrated with coals of fire, fetch'd from many Cities and Towns, burnt and ruined by the tyranny of War.

## C H A P. XV.

*How the Antients depicted Phœbus or Sol.*

I. **M** *Acrobis* saith that in *Affyria* was found the Statue of *Apollo*, *Phæbus* or *Sol*, the father of *Æsculapius*, in the form of a young man, and beardless, polished with Gold, who stretching out his Arms, held in his right hand a Coachmans whip; and in his left a thunderbolt with some ears of Corn.

“ The Tyrant of *Syracuse*, *Dionysius*, with fury pulled off the beard from the figure of *Æsculapius*, saying it was very incongruous that the father should be beardless, and the son have one so exceeding long.

II. *Eusebius* saith that in *Egypt* the Image of *Sol* was set in a ship, carried up, and supported by a *Crocodile*: and that they (before letters were invented) framed the shape of the Sun, by a Scepter, in the top of which was dexterously engraven an eye.

“ The Scepter signified Government: the eye, the power which over-sees and beholds all things.

III. The *Lacedæmonians* depicted *Apollo* with four ears, and as many hands.

“ By which was signified the judgment and prudence of God, being swift and ready to hear, but slow to speak, and from thence grew that proverb among the Grecians.

IV. *Herodotus* reporteth that the *Phœnicians* had the Statue of the Sun made in black stone, large and spacious at bottom, but sharp and narrow at top, which they boasted to have had from Heaven.

V. *Laëtiants* saith that in *Persia*, *Phæbus* or *Apollo* was their chiefest God, and was thus described; he had the

the head of a Lyon habited according to the Persian custom, wearing on his head such ornaments as the women of *Persia* used, holding by main force a white Cow by the horns.

“The head of the Lion sheweth the Suns Dominion  
“in the sign *Leo*; the Cow shews the Moon, whose  
“exaltation is *Taurus*: and his forceable holding, the  
“Moons Eclipse which she cannot avoid.

VI. *Pausanias* telleth that in *Patra* a City of *Achaia*, a metalline Statue of *Apollo* was found in the proportion of an Ox or Cow.

VII. *Lucianus* saith that the *Affyrians* shaped him with a long beard ( shewing his perfection ; ) upon his breast a shield ; in his right hand a spear, in the top of which was *Victoria* ; in his left hand *Anthos*, or the Sun flower : this body was covered with a vestment, upon which was painted the head of *Medusa*, from which dangled downwards many swarms of snakes ; on the one side of him *Eagles* flying, on the other side a lively *Nymph*.

VIII. The *Egyptians* composed the statue of the Sun in the shape of a man, with his head half shaven.

“By the head half shaven, is signified that though his  
“beauty or shining may be clouded for a time, yet that  
“he will return and beautify the same with his pristin  
“brightness ; as the growing of the hairs ( which signi-  
“fify his beams ) to their full extent and perfection a-  
gain may denote.

IX. *Martianus* thus describes him ; upon his head ( saith he ) he wears a royal and gorgeous Crown, in- chas'd with multitudes of precious Gems ; three of which beautifie his fore-head ; six his temples ; and three other the hindermost part of the Crown : his hair hanging down in tresses, looks like refined Gold, and his Countenance wholly like flame : his vestment is thin,

subtil, and wrought with fine purple and gold; in his right hand he holds a bright shield; and in his left a flaming fire-brand: on his feet he hath two wings, beset with fiery Carbuncles.

X. *Eusebius* writeth that in *Elephantinopolis* (a City in *Egypt*) the Image of *Apollo* was framed to the due likeness of a man throughout the body, save only, that he had the head of a Ram, with young and small horns, and his aspect of a *Cerulean* and blewish green, not unlike to that of the Sea.

“The head of the Ram signifies the Sun’s exaltation in the sign *Aries*; and the young horns the change or New of the Moon, made by her conjunction with the Sun, in which she looks blewish.

*There might you see with greatest skill intexed,  
The portraicture of Phœbus lively drawn;  
And his fair Sisters shape thereto annexed,  
Whose shining parts seem’d shadowed o’re with lawn.  
And though with equal art both were explain’d,  
And workmens care gave each of them their due,  
Yet to the view great difference remain’d,  
In habit, shape, aspect, and in their hue.  
For one of them must give the day his light:  
And th’ other reign Commandress of the night.*

## CHAP. XVI.

### *How the Antients depicted Venus.*

I. **H**ER Statue is framed in the shape of a most beautiful and young woman, standing upright in a huge shell of fish, drawn by two other most ugly and strange



strange Fishes, as *Ovid* at large noteth.

II. *Pausanias* saith she is drawn in a Coach, through the airy passages, with two white Doves (as *Apuleius* also affirmeth) which are called the birds of *Venus*.

III. *Horace* and *Virgil* affirm that the Chariot of *Venus* is drawn by two white Swans, of which *Statius* also maketh mention, who saith that those birds are mott mild, innocent, and harmless, and therefore given unto *Venus*.

IV. *Praxiteles* an excellent engraver in the Island of *Guidos*, made her Image naked, and without clothes, as also did the Grecians.

“By which was signified that all luxurious and licentious people, were by their inordinate lusts, like beasts deprived of sence, and left as it were naked and despoyled of reason, and understanding; and oftentimes also stripped thereby of their riches, goods and estates.

V. *Lactantius* saith that the *Lacedemonians* framed and composed the Image of *Venus* all armed like a Warrior, holding in one hand a spear, in the other a shield or target.

“And this was by reason of a certain Victory which the women of that place got over their enemies, the people of *Messenia*, which success they supposed to have proceeded from the power and assistance of *Venus*, as inspiring these womens hearts with courage, stoutness and resolution.

## C H A P. XVII.

*How the Antients depicted Mercury.*

I. **T**He Antients described him in the shape of a young man without a beard, with two small wings fixed behind his shoulders and ears, his body almost all naked, save that from his shoulders depended a thin vail, which winded and compassed about all his body; in his right hand he held a golden purse, and in his left a *Caduceus*, or snaky staff, to wit, a slender white wand, about which two Serpents do annodate and entwine themselves, whose heads meet together just at the top, as their tails do at the lower end.

“ This resemblance was called *Concordia* or *Signum Pacis*; upon which it came to pass, that Embassadors, and great men in matters of State, carried always in their hand such a like staff, and were called *Caduceators*.

II. *Apuleius* writeth that *Mercury* was a very youth, having very short hair on his head of an Amber colour, and curled, having for a vestment only a subtil and thin vail made of Purple Silk.

III. *Martianus Capella* describes him young, yet of a strong and well composed body, with certain young hairs of a yellowish colour sprouting out of his chin.

IV. *Pausanias* saith that in a Province of *Corinth*, he was depicted like a young man carrying a ram upon his shoulders: and that a Statue (brought from *Arcadia* unto *Rome*) erected in the temple of *Jupiter Olympicus*, had on its head a helmet of engraven steel; and over his shoulder, a coat, who held under his arm the Image of a ram.

V. Among

V. Among some of the *Egyptians* his Image was framed with a head like a dogs, holding in his right hand a *Caduceus* or snaky wand; shaking with his left a green bough of a Palm.

“By the head of the dog was understood subtilty  
“and crattiness ( no beast being so subtil as a dog; ) by  
“the snaky wand the power of wisdom and Elo-  
“quence in producing of peace, signified by the green  
“palm.

VI. By some he was depicted in the similitude of a very aged man, his head almost bald, saving that on the sides there remained some few hairs, short and curled; his look grim, severe and sower; his complexion of a tawny, anient hue; his upper garment, of a Lions skin; in his right hand a huge pole-ax, in his left hand an Iron bow; at his back hanging a Quiver of steel-headed arrows: to the end of his tongue were fastned many small chains of Gold, at whose ends were tyed multitudes of all sorts of men, which he seemed to draw unto him; looking alwayes backward, to behold the innumerable troops of people following him.

“By this description is signified the all-powerful and  
“attractive vertue of Eloquence; which by his age  
“is understood to be found only in old, wise and expe-  
“rienced men, as being in them more mature and per-  
“fect, than in those of younger years, of which *Homer*  
“speaks at large in his Commendation and Praise of  
“*Nestor* : from whose mouth ( saith he ) plentifully  
“rolled forth most pleasant and dulcid streams; whose  
“pen distilled crySTALLINE drops of delicious sweetness;  
“whose works and fruits so compleatly adorned with  
“golden sentences, asswageth the malice of time, and  
“mitigateth and allayeth the spight of forgetfulness,  
“that his perpetuity is engraven in the brass leaved  
“books of eternal memory, never to be blotted out.

CHAP.

## C H A P. XVIII.

*How the Antients depicted Diana or Luna.*

I. **D**iana, Cynthia, Lucina, or Luna was according to *Propertius* depicted, in the likeness of a young beautiful virgin; having on either side of her forehead two small glistering horns, newly putting forth, drawn through the air in a purple coloured Coach, by two swift paced horses, the one of a sad Colour, the other of a white.

“ These two differing horses *Boccace* saith, shew that she hath power both in the day and night.

II. *Claudianus* saith that her Chariot is drawn by two white Bullocks, ( which Image the *Egyptians* worshipped with great zeal and reverence ) having one of their flanks bespotted with divers stars, and on their heads two such sharp horns, as the Moon hath in her chiefeft wain.

III. *Cicero* describes her statue ( which he brought out of a temple in *Cicilia* ) of a wonderful height; and large dimension, the whole body covered with a thin vail, of a youthful aspect, holding in her right hand a lively burning torch, and in her left an Ivory bow, with a Quiver of Silver headed arrows hanging at her back.

IV. The Poets ( who call her the goddess of hunting and imperial governess of Woods and Groves ) describe her in the habit of a young *Nymph*, with her bow ready bent in her hand, and a Quiver of arrows hanging by her left side; a swift paced Greyhound fast tyed to her right side, with a collar about his neck; and after her following troops of *Sylvan Virgins*,  
which



which are chaste, and are called the *Nymphs* of *Diana*.

V. These Virgins and Votresses of the Goddess, we thus describe.

Scarce mounted Sol upon his glorious Car,  
When o're the lofty hills, and lowly plain,  
Running apace, you might perceive afar  
A Troop of Amazons to post amain.

But when they nearer came unto your view,  
You might discern Diana and her Crew.

A careless crew of lively Nymphs, despising  
The joyous pleasures and delights of love;  
Wasting their days in rural sports devising:  
Which know no other, nor will other prove.

Wing'd with desire to overtake the chase,  
Away they flung with unresisted pace.  
Their necks and purple veined arms are bare,  
And from their Ivory shoulders to their knee,  
A Silken vestment o're their skin they wear,  
Through which a piercing eye might chance to see.

Close to their bodies is the same engirted,  
Bedeck'd with pleasing flowers their inserted.  
Each in her hand a Silver bow doth hold,  
With well stor'd quivers hanging at their backs:  
Whose arrows being spent they may be bold  
To borrow freely of each others packs.

Thus are these nimble skipping Nymphs displai'd;  
That do attend that Goddess, Queen and Maid.

VI. In *Arcadia* saith *Pausanias* was a statue of *Diana*, covered over with the skin of a Hind, and from her shoulders hung a Quiver of Arrows; in the one hand a burning Lamp, the other leaning upon the heads of two serpents, and before her feet a hound.

VII. The

VII. The *Egyptians* worshiped her under the name of *Ifis*; and depicted her covered with a black and sable vestment, in token that she herself giveth no light; holding in one hand a Cymbal, in the other an earthen vessel of water, upon which *Servius* saith, many thought her to be the Genius of *Egypt*.

“By the Cymbal is shewed the murmurings, and  
 “roarings of *Nilus*, when it overflows *Egypt*; and by  
 “the other vessel the nature of the Country, which is  
 “moist and full of lakes, pools and rivers.

## CHAP. XIX.

### *How the Antients depicted Janus.*

I. **J**ANUS is depicted with two faces; in the one of his hands is a long rod or wand; in the other a Key.

“The two faces of *Janus* signifie time; the one being withered and hoary, shews time past; the other youthful and beardless, time to come.

II. *Pliny* saith that *Numa* King of the *Romans*, caused the statue of *Janus* to be hewed out in such sort, that the fingers of his hands appeared to be three hundred sixty five, to shew that he was God of the year, whereupon they called the first month of the year *Januarius*, from *Janus* their God.

“Under the feet of *Janus* is oftentimes placed twelve  
 “Altars, shewing thereby the months of the year, or  
 “signs of the Zodiack, through which *Sol* makes his  
 “revolution.

III. The *Phœnicians*, as *Cicero* and *Macrobius* report, framed his Image in the form of a serpent, holding her  
 tail

tail in her mouth, and continually turning round.

IV. Some depicted *Jannus* with four faces, (as were those statues which were found in divers places of *Tuscany*.

"By the four faces was signified the four seasons of the year, *Spring*, *Summer*, *Autumn* and *Winter*: "which some think to be *Venus*, *Ceres*, *Bacchus* and "*Vulcan*; and sometimes the winds with *Æolus* their "Commander.

C H A P. XX.

*How the Antients depicted Aurora.*

I. **H**omer describes her like a young Virgin, having her hair disheveled, and hanging loose about her shoulders, being of the colour of the purest gold, sitting in a golden chair, with all her vestments of that hue and colour.

II. *Virgil* saith, that upon the instant time of the sable nights departure, she cometh with one of her hands full of *Roses*, *Gilliflowers* and *Lillies*, taken out of a basket which she carries in the other hand, which she besprinkles on the marble pavement of the lower Heavens, adorning the Sun with unspeakable beauty.

III. Others describe her, holding in one hand a flaming torch, and drawn in a gorgeous and star bespotted Chariot, by winged *Pegasus*; which favour she obtained of *Jupiter* by many importunate requests, presently after the downfall of *Bellerophon*.

IV. She is as it were the Herald and Messenger of *Phæbus*, who receives her being from the vertue of his beams; and is no other, but that rubicund and Vermilion

million blush in Heaven, which *Sol's* first appearance worketh in the *Orient*, and from thence descending beautifies our *Hemisphere* with such a resplendency. See the tenth Section of the one and twentieth Chapter of the first Book.

## CHAP. XXI.

### *How the Antients depicted Juno.*

I. **S**He was set forth by the Ancients like a middle aged woman, holding in one hand a silver vessel, in the other a sharp Spear: and *Homer* saith she was drawn in a Chariot glistering with precious stones; whose wheels were Ebony, and their nails fine silver, mounted upon a silver seat; and drawn with horses, which were fastned with chains of gold.

II. She is oftentimes depicted with a Scepter in her hand, to shew that she hath the bestowing of Governments, Authorities and Kingdoms.

III. *Martianns* depicts her ( sitting in a chair under *Jupiter* ) with a thin veil over her head, with a Coronet upon it, incased and adorned with many precious Jewels; her inward vestment fine and glittering; over which depended a mantle of a sad and darkish colour, yet with a secret shining beauty; her shoes of an obscure and sable colour; in her right hand a thunderbolt; and in her other a loud noised Cymbal.

IV. *Pausanias* saith that in a temple in *Corinth*, her statue ( made of Gold and Ivory ) was adorned with a glorious Crown, on which was insculped the pictures of the *Graces*; with a *Pomegranate* in the one hand; with a Scepter ( on the top of which a Cuckow ) in  
the



the other : for that *Jupiter*, when he was first enamoured of *Juno*, transformed himself into that bird.

“ Touching this story ( and others of like kind )  
 “ *Pausanias* saith, that although he did not believe such  
 “ things to be true, nor any others, which are so writ-  
 “ ten of the Gods ; yet saith he, they are not altoge-  
 “ ther to be rejected, in that there were no such things  
 “ reported but that they were impleated and filled  
 “ with mysteries, and carried in themselves an inward  
 “ meaning, and secret understanding, the which no  
 “ doubt some might by their writings have unshadow-  
 “ ed, if the tyranny of fore passed times had not de-  
 “ stroyed and obliterated the same.

V. *Tertullian* writeth that in *Argos* a City in *Greece*, the statue of *Juno* was covered all over with the boughs of a Vine, and underneath her feet lay the skin of a Lion, which discovered the hatred and disdain she bare towards *Bacchus* and *Hercules*, to whom ( as the Poets say ) she was step-mother.

VI. Some have painted her a middle aged woman, holding in one hand a poppey flower or head ; with a yoke or pair of fetters lying at her feet.

“ By the yoke was meant the band of marriage,  
 “ which tyeth man and wife together ; and by the  
 “ Poppey, fruitfulness or the innumerable issue of chil-  
 “ dren, which are brought forth into the world ( sig-  
 “ nified by the roundness of the Poppey head, and its  
 “ numberless seeds therein contained. ) From hence  
 “ many suppose her to be the goddess of marriage.

## C H A P. XXII.

*How the Antients depicted Ops or Tellus:*

I. **M**Artianus saith, that *Ops* ( the wife of *Saturn* ) is an old woman, of great bigness, continually bringing forth children, with whom she is encompassed and set round, going in a green vestment, with a veil over her body, spotted with divers colours, wrought with infinite curious knots, and set with all sorts of Gems and Metals.

II. *Varro* ( out of *Boccace* ) thus describes her : she is crowned ( saith he ) with a Crown insculp'd with Castles and Towers; her apparel green, overshadowed with boughs ; in the one hand a Scepter, in the other a Ball or Globe ; and near to her a Chariot of four wheels, drawn by four Lions.

“ By the Crown is signified the habitations of the  
 “ earth ; by the greenness and boughs, the increase there-  
 “ of ; by the Scepter, the Kingdoms and Governments of  
 “ the world ; by the ball, the roundness thereof ; by  
 “ the Chariot, the continual motion, change and alte-  
 “ ration of things ; by the Lions, the wisdom and  
 “ strength of mankind, by which things are carried on  
 “ and managed.

III. *Isidorus* saith that this Goddess was painted holding a key in one of her hands : which shews that in the winter the bowels of the earth are locked up by reason of cold ; which at the approach of Spring and Summer is unlocked again.

IV. She was sometimes depicted in the form of an ancient woman, having her head circumcinct with ears of corn, holding in her hand a poppey-head :  
 drawn

drawn in a Chariot ( as *Orpheus* saith ) with two fierce and untamed *Dragons*.

V. The earth is also called *Ceres*, which many have depicted with torches, lights and fire-brands in her hands; as *Praxiteles* in a temple, seated upon a promontory of *Attica*.

CHAP. XXIII.

*How the Antients depicted Neptune and the Sea Gods.*

I. **N** *Neptune* among the Antients is depainted with several countenances, sometimes with mild and pleasant looks, sometimes with lowring and sad, and at other times with a mad, furious, and angry aspect; naked, holding in his hand a silver trident or forked mace, standing upright in the concavity of a great Sea shell, forcibly drawn by two monstrous horses, which from the middle downwards have the proportion and shape of fishes, as *Statius* saith.

“ That variety of Aspect ( according to *Virgil* and “ *Homer* ) is given him from the Sea, in that it at sundry times sheweth it self so: and the trident, the “ three Gulfs of the Mediterranean Sea.

II. Sometimes he is depainted with a thin veil hanging over one of his shoulders, of a *Cerulean* or blewish colour.

III. *Lucianus* setteth him down with marvellous long hair hanging down over his shoulders, of a very sad and darkish colour.

“ Yet *Servius* and others affirm that all the Gods of “ the Sea were for the most part in the shape of old  
S 2 “ men

“ men with white and hoary hairs, proceeding from the  
 “ froth or spume of the Sea.

IV. *Plato* describes him in a sumptuous Chariot, holding in one hand the reins of a bridle : in the other a whip, drawn by Sea-horses galloping.

V. *Martianus* describes him of a greenish complexion, wearing a white Crown : signifying thereby the spume and froth of the Sea.

VI. *Glaucus* ( another Sea God ) saith *Philostratus*, hath a long white beard and hair, soft and dropping about his shoulders; his eyes green and glistering; his brows full of wrinkles, and green spots; his breast all over-grown with greenish Sea weed or moss, his belly and from thence downwards fish like, full of fins and scales.

VII. *Galatea* ( a Sea Goddess ) is described ( by the said *Philostratus* ) to be drawn in a strange framed Chariot, by two mighty Dolphins, which were guided by two silver reins held in the hands of old *Triton's* daughters; over her head, a Canopy made of Purple silk and silver, with her hair hanging carelessly over her shoulders.

See another description of her at the seventh Section of the one and twentieth Chapter of the first Book.

VIII. *Oceanus* ( the father of all the Sea Gods ) saith *Thales Milesius*, is depainted, drawn on a glorious Chariot, accompanied and attended with a mighty company of *Nymphs*; with the face of an old man, and a long white beard.

IX. *Æolus* is depainted with swoln blub cheeks, like one that with mainforce strives to blow a blast; two small wings upon his shoulders, and a fiery high countenance.

He is called the God and Ruler of the winds, whose descriptions are in the three and twentieth Chapter of the first Book.

X. *Thetis*



X. *Thetis* ( another Sea Goddess ) is depicted by the sixth Section of the one and twentieth Chapter of the first Book.

CHAP. XXIV.

*How the Antients depicted Nemesis.*

I. She was by *Macrobius* described with wings on her shoulders ; hard by her side the rudder of a ship, she herself standing upright upon a round wheel ; holding in her right hand a golden ball, in the other a whip.

II. She is often depicted, holding the bridle of an horse in one hand, and in the other a staff.

III. *Chrysippus* ( as *Anlus Gellius* saith ) described her like a young Virgin, beautiful and modest, with an eye prying round about her, for which cause the ancients called her the all-discerning Lady.

“ This *Nemesis*, as *Pausanias* and *Amianus Marcellinus* say, was held to be the Goddess of Punishments, who castigates the offences of Malefactors, with pains and torments, according to their sins and demerits ; and rewarding the vertuous with honour and dignities : she was the daughter of *Justitia* ( who dwells and inhabits very secretly, within the house of Eternity, recording the offences of the wicked ) and a most severe and cruel punisher of arrogance and vain glory. *Macrobius* saith, that this *Nemesis* was adored among the *Egyptians* ( by them called also *Rhammusia* ) as the revenger and chief enemy of Pride, Insolency, and Haughtiness ; and that she had erect and dedicated unto her, a most stately and magnificent statue of Marble.

## C H A P. XXV.

*How the Antients depicted Pan.*

I. **P**AN (the God of Flocks and Sheep) is from the middle upwards in proportion like a man, with his face ruddy and sanguine, being very hairy; his skin and breast covered with the skin of a spotted Doe or Leopard; in the one hand a shepherds hook, in the other a whistle: from the middle downwards the perfect shape of a goat, in thighs, legs and feet.

II. *Justine* saith, that *Pan's* Statue was made in a temple in *Rome*, near the hill *Palatine*, appearing to the view all naked, saving that it was slightly enshadowed and covered with a Goats skin.

"Thereby is signified that (as it was reputed in those days) *Pan* kept his habitation among Hills, Woods and Groves, who was indeed most of any adored and worshiped by Shepherds, as he that had the peculiar care and Government of their flocks.

*Goat-eared Pan, his small tipt, new grown horns  
Advance themselves, about whose either side  
A flowry Garland twines, and there adorns  
His curled Temples with a wondrous Pride.  
His face is of a high and reddish blush,  
From which hangs down a stiff rough beard or bush.  
And for his bodies vesture he doth wear  
The finest skin of the most spotted Doe,  
That ever any in those woods did bear,  
Which from his shoulder loose hangs to his toe.  
And when he walks, he carries in his hand  
A Shepherds book, made of a knoiless wand.*

"*Servius*

" *Servius* saith, by the horns is signified either the  
 " Beams of the Sun, or New of the Moon, at what  
 " time she is horned: his red face signifies the element  
 " of fire: his long beard, the Air: his spotted garment,  
 " the starry firmament: his Shepherds hook, the rule  
 " and Government of nature.

IV. After the form of *Pan* were the *Fauns*, *Sylvans*,  
*Satyres* and *Fairies* set forth, having little short horns  
 growing on their heads, with small ears, and short  
 tails.

" These are held among some people in very great  
 " regard and observance, being of a wonderful speed in  
 " running. *Plutarch* writeth, that there was one of  
 " these brought and presented for a rare gift unto  
 " *Sylla*, as he returned from the wars against *Mi-*  
 " *thridates*.

V. *Plato* understandeth by *Pan*, Reason and Know-  
 ledge; which is twofold; the one of a man, the  
 other of a beast: by the upper part of *Pan*, he  
 signifies truth, accompanied with Reason, which  
 being Divine, listeth man up towards Heaven:  
 by the lower parts of him is signified the false-  
 ness, beastliness and rudeness of those, which living  
 here in the World, are only delighted with  
 the pleasures and foolish vanities thereof.

## CHAP. XXVI.

### *How the Antients depicted Pluto.*

I. **M** *Artianus* saith that *Pluto* sitteth ( in the lower  
 region ) majestically in a chair, holding in  
 one of his hands a black imperial Scepter, and on his  
 S 4 head

head a stately Crown; at whose left hand sitteth his wife *Proserpina*, attended with many Furies, and evil Spirits, and at whose feet lyeth chained the Dog *Cerberus*.

II. The ancients also have painted him drawn in a Chariot, drawn with four furious black horses, from out whose fiery nostrils proceedeth thick and ill-favoured smoak, as *Claudianus* saith.

III. Some say that his head is encircled with a garland of *Cypress* leaves; others with *Narcissus* leaves.

“The first shew sadness and horror, used in burials,  
“and about the dead: the other are more grateful, and  
“are used in memory of the untimely death of that  
“youth.

IV. *Charon* (*Pluto's* Ferriman, which carries souls over the three rivers of Hell, *Acheron*, *Cocytus* and *Styx*) is described old, yet exceeding strong, with a black mantle hanging loosely over his shoulders, as *Boccace* and *Servius* say.

“By *Charon* is understood time; and whereas he is  
“supposed to have the transportation of souls from the  
“one side of those rivers to the other; thereby is signi-  
“fied, that time, so soon as we are born and brought  
“forth into the world, doth carry us along by little  
“and little unto our deaths; and so setteth us over  
“those rivers, whose names by interpretation signifie  
“sorrowfulness, for that we pass this life with mi-  
“sery and adversity.



## CHAP. XXVII.

*How the Antients depicted the Parcae, or Sisters.*

I. **T**He Sisters which are called *Parcae*, are said to attend upon *Pluto*, which are three, and are called *Clotho*, *Lachesis* and *Atropos*.

II. *Clotho* takes the charge of the Births and nativities of mortals: *Lachesis* of all the rest of their life: and *Atropos* of their death, or departure out of this world.

III. They are all three depicted sitting on a row, very busily employed in their several offices; the youngest Sister drawing out of a Distaff a reasonable big thread: the second winding it about a wheel, and turning the same, till it becomes little and slender: the eldest (which is aged and decrepit) stood ready with her knife, when it should be spun to cut it off.

IV. And they are described to be invested with white veils, and little Coronets on their heads, wreathed about with garlands, made of the flowers of *Narcissus*.

## CHAP. XXVIII.

*How the Antients depicted Minerva, or Pallas.*

I. **M***inerva* (as taken for *Bellona*) *Licophrones* saith was depicted with a flaming fire-brand in her hand by the Antients.

II. Most writers have described *Minerva* in the shape of a young woman, of a lively and fresh countenance, yet of an angry look, fix'd stedfast eye of a bleuish green

green colour, compleatly armed at all weapons, with a long Spear in the one hand, and in the other a Crystal shield, or target: upon her helmet a garland of Olive branches, and two children, Fear and Horror, by her side with naked knives in their hands, seeming to threaten one another.

III. *Pausanias* saith that in *Greece*, the statue of *Minerva* was made with an helmet, on the top of which was the shape of a *Sphinx*; and on the sides thereof, two carved *Griffins*.

IV. *Phidias* making her statue in *Greece*, placed on the top of her Helmet the form of a Cock.

V. She was also painted in *Greece*, sitting on a stool, and drawing forth little small threads from a distaff; for that the Ancients supposed her to be the inventress of spinning and the like.

## CHAP. XXIX.

### *How the Antients depicted Vulcan.*

I. **V***ulcan* is depicted, standing, working and hammering in a Smiths forge, on the hill *Ætna*, framing Thunderbolts for *Jupiter*, and fashioning Arrows for the God of love. *The opinions which the Ancients had of Vulcan were various, in which respect he is shaped sometimes in one form, sometimes in another.*

II. Some make him lame of one leg, of a very black and swarthy complexion, as it were all smoaky; of a general ill shaped proportion in all his Lineaments; and because that he is the husband of *Venus*, often de-picture her with him.

III. *Alexander Neapolitanus* relateth that in one place of

of Egypt, was erected the statue of *Vulcan*, which held in one of its hands, the true and lively proportion of a mole; and in his other hand a Thunderbolt.

“The mole was so placed, because they thought he sent unspeakable numbers of moles among them, as a plague to them, which did eat, gnaw, and destroy every thing which was good.

CHAP. XXX.

*How the Antients depicted Bacchus.*

I. **P**hilostratus saith that his statue was framed in the likeness of a young man without a beard, of a corpulent and gross body, his face of an high colour and big; about his head a garland of Ivy leaves; upon his temples two small horns; and close by his side a certain beast, called a *Leopard* or *Panther*.

“This description is drawn from the nature of wine, (of which as the Poets feign, *Bacchus* is the God) whose inventer and finder out was certainly *Noah*, which not only *Moses*, but also *Josephus* and *Lactantius* specially affirm; wherefore some suppose him to be this God *Bacchus*.

II. *Claudianus* saith, that his Image or Statue is made all naked; thereby shewing the nakedness of those which abuse themselves with wine, by which they reveal and open those things which ought to be concealed and kept hid.

III. *Diodorus Siculus* saith, that *Bacchus* among the *Grecians* was depicted in two several forms, the one of a very aged man, with a long beard, stiff and thick; the other of youthful years, of a pleasant and amorous aspect.

“By

“ By the first is shewed the effects of the intemperate  
 “ use of wine, which overcomes nature and brings  
 “ with it old age : by the other, how it cherishes and  
 “ revives the heart, used moderately.

IV. *Macrobius* saith that *Bacchus* was framed some-  
 times in the likeness of a young child, sometimes of a  
 youth, sometimes of a man ; and sometimes in the  
 likeness of decrepit old age.

— “ By these was signified the four seasons of the year,  
 “ the vine being dedicated to *Sol*, in whom they all exist.

V. This Picture was made in the likeness of a Bull  
 ( among the *Cirenians*, a people inhabiting the farther  
 part of *Persia*.)

“ The reason hereof was because *Proserpina* ( the  
 “ daughter of *Jove* ) brought him forth in that form.

VI. *Philostratus* saith that *Bacchus* was oftentimes  
 drawn clothed in womens garments, and in a long pur-  
 ple robe ; wearing upon his head a Coronet of Roses,  
 with companions and followers, all in like loose and  
 wanton garments, fashioning themselves, some like rural  
*Nymphs*, as the *Dryades*, *Oreades*, &c. some like Sea  
*Nymphs*, as *Nereides*, *Syrens*, &c. some like *Satyres*,  
*Fauns*, and *Sylvans*, &c.

“ The womens garments shew that wine makes a  
 “ man faint, feeble, and unconstant like to a woman.

VII. *Pausanias* saith that among the *Eleans*, the pi-  
 cture of *Bacchus* was made with a long beard, and  
 clothed with a long gown hanging to the feet ; in one  
 hand a sharp hook, and in the other a bowl of wine, and  
 round about him many Vine-trees and other fruitful  
 plants.

VIII. The Statue of *Bacchus* also, was sometimes set  
 forth and adorned with Coronets made of fig-tree  
 leaves, in memory of a *Nymph* ( as some say ) called  
*Syca*, which was by the Gods metamorphosed into that  
 plant.

“ In



"In like manner, the Nymph *Staphilis* ( on whom  
 " *Bacchus* was in like manner enamoured ) was trans-  
 " formed into the Vine, from whence it is that those  
 " plants are so exceeding grateful and pleasant unto  
 " this God.

CHAP. XXXI.

*How the Antients depicted Fortune.*

I. *Fortune* was depicted by some with two faces, the  
 one white and well-favoured; the other black,  
 and ugly.

"And this was because it was held, that there were  
 " two Fortunes, the one good, from whom came rich-  
 " es, happiness, quiet, content and pleasure: the other  
 " bad, from whom came wars, afflictions, crosses,  
 " disasters, calamities, and all other miseries whatso-  
 " ever.

II. The *Thebans* made her in the shape of a woman;  
 in one of her hands a young child, to wit, *Pluto* or  
 Riches.

"So that in the hands of Fortune, they put the di-  
 " sposing of Wealth, Honour, Glory and all Happi-  
 " nesses.

III. *Martianus* describes her a young woman, always  
 moving, covered with a garment of the thinnest silk;  
 her steps uncertain, never resting long in a place; car-  
 rying in her spacious lap the universal fulness of the  
 treasures, riches, honour and glory of this world;  
 which in hasty manner ( with her hand ) she offers;  
 which offer, if not instantly received, was utterly lost;  
 in her right hand a white wand, with which she smites  
 such

such as offend her, slight her kindness, or are not nimble enough to receive them.

*Oh cruel Fortune, stepdame to all joys,  
That disinherits us from sweet content,  
Plunging our hopes in troubled Sea's annoyers;  
Depriving us of that which nature lent!  
When will thy proud insulting humour cease,  
T' assuage the sorrows of an only one?  
That free from cares, its soul may live in peace,  
And not be metamorphos'd into stone.  
But why entreat I thy unstable heart,  
Knowing thy greatest pleasure, thy delight  
Consists in aggravating mortals smart  
Poyson'd with woes, by venom of thy spight?  
'Tis what thou wilt, must stand, the rest must fall,  
All humane Kings pay tribute to thy might:  
And this must rise, when pleaseth thee to call,  
The other perish in a woeful plight.  
And this is it, that chokes true vertues breath,  
Making it dye, though she immortal be:  
Fruitless it makes it; subject unto death,  
To fatal darkness, where no eye can see.  
Oh come you wounded Souls, conjoin with me;  
In some adumbrate thicket let us dwell,  
Some place which yet the Heavens ne'r did see,  
There let us build some despicable Cell.  
Strength, Beauty, perish: Honours fly away:  
And with Estates, Friends vanish and decay.*

IV. In a temple in Greece, Fortune was made in the form of a grave Matron, clothed in a garment agreeable to such years, whose countenance seemed very sad; before her was placed the Image of a young Virgin, of a beauteous and pleasant aspect, holding out her hand

to another; behind these, the Image of a young child, leaning with one of its arms upon the Matron.

“The Matron is that Fortune, which is already past;  
“the young Virgin, that which now is: and the young  
“child beyond them both, is that which is to come.

*Quintus Curtius* saith, that among the people of *Scythia*, Fortune was depicted in the form of a woman without feet, having round about her at her right hand a number of little wings.

“Being without feet, shews that she never stands  
“firm; and the many wings shew, that her gifts and  
“favours are no sooner given, but are presently lost,  
“and do as it were fly away again, before they be fully  
“possessed.

VI. *Alexander Neapolitanus* relateth that in *Greece*, her Image was made wholly of Glasse; to shew that her favours are brittle, and subject to sudden decays.

VII. *Gebes* the Philosopher resembled Fortune unto a Comedy; in which many Actors appear often as Kings and great Monarchs; and presently after become poor fishermen, slaves, bond-men, and the like.

VIII. *Socrates* compared her to a Theatre, or common meeting place, where without all order or observance men take their places and seats, without respect to the dignity of any.

“Hereby is shewed that she (without respect of  
“birth, worth, merit or state,) blindly, unadvisedly,  
“and without any order or reason, bestows felicities,  
“riches and favours.

IX. In *Egira*, a City of *Acbaia*, Fortune was drawn in the shape of a beautiful woman, who held in one of her hands a *Cornucopia*; in the other, the boy *Cupid*.

“By which is signified (as *Pausanias* saith) that  
“beauty without riches avails nothing: and indeed I  
“may

“ may say he is doubly fortunate, who in his love enjoys the fruition of both beauty and riches: but he is happy in the superlative degree, who with the other two meets with vertue also.

X. *Giraldus* saith that *Fortune* was with some depicted riding on a horse galloping; with which swift-ness she seems to pass invisable; after whom followeth *Destiny* with great wrath and fury, holding in her hand an Iron bow, and aiming to strike *Fortune* at the heart.

“ By her swift galloping, is signified her mutability.  
“ See the fourth Section of the eighteenth Chapter of the first Book.

## CHAP. XXXII.

*How Vertue, Truth, Peace, Honour, Fame and Opinion were depicted.*

**V**ertue in Greece was made in the form of a Pilgrim, like a grave and austere woman; sitting alone upon a four squared stone, melancholy, and leaning her head upon her knees.

“ Being a Pilgrim, shews she hath no resting place, secure abode, or certain habitation upon the earth: the form of her sitting, shews her life to be full of troubles, dangers, crosses, and miseries. See the first Section of the nineteenth Chapter of the first Book.

Hæc angusta via horrendis scatet undique monstis,  
Et vita innumeris est interclusa periclis.  
Sed tamen incolumes hæc virtus ducit alumnos  
Extrema ut vitent, ne pes hinc indè vacillet.

Pro-



Proclamat longè spes, hic sunt digna laboris  
Præmia, et excipient mordaces gaudia curas.  
Pax, sincera quies nullo temeranda dolore,  
Lætitia hîc habitant longum, sine fine, per ævum.

*Fierce Monsters do this narrow passage bound;  
And deadly dangers it encompass round.  
Yet virtue doth her Followers safely guide,  
Lest they should go astray on either side.  
And Hope proclaims afar; loe here you shall  
Have joy for Sorrow; honey for your gall.  
Here Peace and joyful rest for ever dwell,  
Which neither cross nor time shall ever quell.*

II. *Truth*, saith *Hippocrates*, was framed in the similitude and likeness of a beautiful woman, attired with gravity and modesty: *Philostratus* saith that she remaineth in the cave of *Amphiarus*, cloathed all in white garments of a beautiful hue: *Lucianus* saith that her statue was made in the form of a young woman, habited in rags, and base attire, with a superscription over her head, how she was *wronged and abused by Fortune*.

III. *Peace*, saith *Aristophanes*, was framed in the shape of a young woman, holding between her arms the Infant *Pluto*, the God of Riches, and Ruler of the lower Regions.

"She is also called *Concordia*, and is a special friend  
"to the Goddess *Ceres*, from whom comes the en-  
"crease of Fruits, Corn, and other nutriments. See  
"the seventh Section of the eighteenth Chapter of the  
"first Book.

IV. *Honour* is depicted with two wings on its shoulders; which as *Alciatus* saith, was made in the form of a little child, cloathed in a purple garment, having a Coronet or wreath of Laurel about his head; hold-

ing hand in hand the God *Cupid*, who leads the child to the Goddess *Vertue*, which is depainted right over against it.

V. *Fame* is painted like a Lady, with great wings, and seeming to proffer a flight, and to mount from the *Earth*, and rove abroad: having her face full of eyes; and all over her garments an infinite number of ears and tongues. See the tenth Section of the eighteenth Chapter of the first Book.

VI. *Opinion*, saith *Hippocrates*, resembles a young woman, not altogether so fair and lovely as *Truth*, yet not deformed, or ill proportioned; being rather impudent than modestly bold in her demeanure, with her hand stretched forth to take whatsoever is offered and presented to her.

### CHAP. XXXIII.

*How Night, Sleep, Silence, Pleasure and Fear were depicted.*

I. **N**ight (the mother of *Sleep* and *Death*) was depicted by the Antients in form of an old woman, having two great wings growing on her shoulders, all cole black, and spread abroad, as if she seemed to offer a flight; and that she is drawn in a Chariot, whose wheels are made of Ebony: having a sad countenance, and an upper garment of a deep black, spotted all over with silver spots like stars, as *Boccace* saith. See the thirteenth Section of the thirteenth Chapter of the third Book.

II. *Sleep* (the brother of *Death*) saith *Hesiod*, was painted of a most sour, lowring, and sad aspect; aged, and

and holding in her left hand a young child very beautiful ; and in her right, another child, of a most swarthy, black and dull complexion, with legs and arms very crooked. *Philostatus* in a Tablet ( which he made for *Amphiarus* ) makes her like an aged woman, slothful and sluggish, cloathed with several garments, the under black, the upper white ; holding in one of her hands, a horn pouring forth seed.

“ By the garments is signified night and day ; by the  
“ seed, rest, ease and quiet.

III. *Harpocrates* ( the God of Silence ) called in Greek *Sigaleon*, was made, as *Martianus* and *Apuleius* say, in likeness of a young child, who close to his lips held one of his fingers as a sign of secrecy. Some portraict him without any face at all ; all covered with the skin of a wolf, painted full of eyes and ears :

“ Shewing it to be good to see and hear much, but  
“ to speak little.

IV. *Voluptia* or pleasure, was depainted a Lady, having a pale and lean countenance, sitting in a pontifical and majestick chair, embroidred and embossed with stars of gold, treading and trampling upon *Vertue*.

V. *Fear*, saith *Pausanias*, was shaped in several forms by the Antents ; sometimes with the head of a Lion among the Grecians ( as on the shield of *Agamemnon* : ) and sometimes with the deformed face and body of a woman.

“ The Corinthians dedicated this Picture so made  
“ unto the sons of *Medea* ; which were slain for bring-  
“ ing such fatal gifts to the daughter of old *Creon* ;  
“ whereby she, and all that regal family perished, and  
“ were for ever extinct.

## C H A P. XXXIV.

*How the Antients depicted several wise men and Philosophers.*

**I.** *S* *Idonius Apollinarius* in the ninth Epistle of his ninth Book, saith that the Philosopher *Zensippus* was painted with a crooked neck: *Aratus* with a neck bowed downwards: *Zeno* with a wrinkled forehead.

**II.** *Epicurus* was painted with a smooth skin: *Diogenes* with a hairy rough beard: *Socrates* with whitish bright hair.

**III.** *Aristotle* was painted with a stretched out arm: *Xenocrates* with a leg somewhat gathered up: *Hieracitus* with his eyes shut for crying.

**IV.** *Democritus* with his lips open, as laughing: *Chrysippus* with his fingers close pressed together, for numbering: *Euclid* with his fingers put asunder, for the space of measures.

**V.** In some antient Bibles and many Pictures, *Moses* is described with horns.

“ The ground of this absurdity was a mistake of the  
 “ Hebrew Text, in that of *Moses* descending from the  
 “ Mount, upon the nearness of the words, קֶרֶן *Ke-*  
 “ ren, *Cornu*, an horn; and קָרָן *Karan*, *Luceo*, to shine.  
 “ The vulgar translation ( of *Exodus* 34. 29. 35. ) a-  
 “ grees with the former, to wit; *Ignorabat quod cor-*  
 “ *nutus esset facies ejus. Qui videbant faciem Moïsis esse*  
 “ *cornutam.* The translation of *Paulus Fagius* is other-  
 “ wise, viz. *Moses nesciebat quod multus esset splendor*  
 “ *gloriæ vultus ejus. Et viderunt filii Israel quod multa*  
 “ *esset claritas gloriæ faciei Moïsis.* Tremelius and Ju-  
 “ nius have it thus, *ut ignoraret Moïsche splendidam esse*  
 “ *faciẽm*



"*factam cutem faciei suæ. Quod splendida facta esset cu-*  
 "tis faciei Moschis. Agreeing with the Septuagint  
 "δεδοξασαι η οψις τῆ γεωμετρος τῆ προσωπῃ, *glori-*  
 "ficatus est aspectus cuius. seu coloris faciei.

V. Alexander the great is described by some, riding upon an Elephant.

"The reason thereof is hard to be discerned; for as  
 "much as I find not in history, that ever he used that  
 "beast in his Armies, much less in his own person: ex-  
 "cept it were for that remarkable battel, which he  
 "fought with Porus King of India; wherein were ma-  
 "ny Elephants: In which himself (as Curtius Arianus  
 "and Plutarch relate) was on horse-back; the name  
 "of which beast yet lives, and is famous in history to  
 "this day.

# CHAP. XXXV.

## Of the farther Progress of these Arts.

I. AS God Almighty (who is the Author of all wisdom) was  
 the first institutor hereof, so also was he the promulgator,  
 by whom these Arts have made progression in the world.

Certainly, saith Philostratus, Picture is an invention  
 of the Gods; as well for the painted faces of the mea-  
 dows adorned with flowers, according to the several  
 seasons of the year; as for those things, which appear  
 in the sky. What wonderful eloquence is this! that in  
 so few words, this Philosopher should clear so great a  
 point. But what saith Gregorius Nyssenus? Man, saith  
 he, is an earthen statue: and Suidas in *Oratione primâ*  
*de Beatitudinibus*, speaking of Adam, saith, This was the  
 first statue, the Image named by God, after which all

the art of Carving used by men receiveth directions : *Lot's* wife was another, turned into a durable pillar of Salt, of whom *Prudentius* ( in *Harmartigenia* ) saith, she waxed stiff, being changed into a more brittle substance, she standeth metamorphosed into stone, apt to be melted, keeping her old posture in that Salt-stone Image ; her comeliness, her ornaments, her forehead, her eyes, her hair, her face also ( looking backward ) with her chin gently turned, do retain the unchangeable monuments of her antient offence : and though she melteth away continually in salt sweat ; yet doth the compleateness of her shape suffer no loss by that fluidity ; whole droves of beasts cannot impare that savoury stone so much, but still there is liquor enough to lick, by which perpetual loss, the wasted skin is ever renewed. To these let us add the pattern of the *Tabernacle* shewed unto *Moses* upon mount *Sinai* : The *Brazen Serpent* made by the expresse command of God : the *Pattern of the Temple* ( which *David* gave unto *Solomon* ) after the form which God made with his own hand : *Ezekiel's* portraict of *Jerusalem* with its formal *Siege* upon a tile by expresse command from God also : the *brazen statue* of our Lord *Jesus Christ* erected by the woman healed of the bloody Issue, as is mentioned by *Photius*, and *Asterius* Bishop of *Amosa*, and other Ecclesiastick writers : the *Picture* also of our Lord made without hands, as it is related by *Damasceus Cedrenus* and others : the *Picture* of *Christ* in a napkin or towel, sent by our Lord himself, unto *Angarus* King of *Edessa* ; together with many more too tedious here to relate.

II. By vertue of this divine hand it was that many Artists of old attained to a certain kind of perfection in these Arts.

We will only refer the proof of this to the examples in the 31 of *Exodus* of *Bezseel* and *Aboliab* ; of whom God himself witnesseth, that he called them by name

to

to make the *Tabernacle*; and filled them with his spirit, not only to devise curious works in *Gold*, in *Silver*, in *Brass*, and in *Silk*; but also gave them skill to teach others the same.

III. Nature also hath not been idle, but hath acted a master piece herein.

To pass by the glory of flowers, the excellent comeliness of beasts (as in the spots of *Leopards*, tails of *Peacock* and the like) I will only remark the same of a Gem, which *Pyrrhus* (who made war with the *Romans*) had; of which *Pliny* in lib. 37. cap. 1. of his natural history, reports, that it being an *Agath*, had the nine *Muses* and *Apollo* holding of a *Lute* depicted therein; the spots not by Art, but by nature, being so spread over the stone, that each *Muse* had her peculiar mark. See *Gaffaret* cap. 5.

IV. The care of Parents in the education of their children, was another reason of the progress hereof.

The Grecians, saith *Aristotle* in cap. 3. lib. 8. of his *Politicks*, did teach their children the Art of *Painting*; and *Plutarch* saith, that *Paulus Æmilius* had *Sculptors* and *Painters* amongst the masters of his children, as well as *Philosophers* and *Rhetoricians*: and *Pliny* saith, that by the Authority of *Pamphilus*, this Art hath been ranked among the liberal sciences, and that only free-born children should learn it. And *Galen* enumerating several arts as *Physick*, *Rhetorick*, *Musick*, *Geometry*, *Arithmetick*, *Logick*, *Grammar* and knowledge of *Law*; add unto these, saith he, *Carving* and *Painting*. And as the Grecians were the first, that taught their children these Arts, so also they provided betimes for them choice masters.

V. These masters by their carefulness and vigilancy, not deceiving those that put their trust in them, became main pillars of these Arts, and propagated them to posterity; which by the addition of considerable gifts and rewards had an honourable esteem in the world.

Their care was manifest in laying down solid principles of Art; of which *Quintilian* in *cap. 2. lib. 12.* of his *Institutions of Oratory* saith, though vertue may borrow some forward fits of nature, yet she must attain to perfection by doctrine. Their vigilancy was seen in watching, to apprehend their scholars capacities, that they might suit themselves accordingly; as in *Tully's* instance of *Isocrates*, a singular good teacher, who was wont to apply the spur to *Ephorus*, but the bridle to *Theopompus*: And their reward was eminent, as *Pliny* noteth in *Pamphilus* his School, out of which *Apelles* and many other excellent Painters came, who taught no body under a talent (which is about 175 pound sterling) thereby the better to maintain the Authority of Art.

VI. *Their practice exactly agreed with their precepts.*

As with *Seneca*, that labour is not lost, whose experiments agree with Precepts; so with *Quintilian*, those examples may stand for testimonies: And it was the practice of Painters of old, as *Galen* witnesseth concerning *Polycletus*, who hath not only set down in writing the accurate precepts of Art; but also that he made a Statue according to the rules of Art contained in those precepts.

VII. *These precepts which they taught their Scholars, they delivered in writing, that they might ever accompany them wheresoever they went.*

*Apelles* gave the precepts of this Art to his disciple *Perseus* in writing, as *Polycletus* did to his; besides an innumerable others now in being too tedious here to recite. The like did these following, *Adæus Mitylenæus*, *Alcetas*, *Alexis* the Poet, *Anasimenes*, *Antigonus*, *Aristodemus Carius*, *Artimon*, *Callixenus*, *Christodorus*, *Democritus Ephesus*, *Duris*, *Eupherion*, *Euphranor Isthmius*, *Hegesander Delphicus*, *Hippias Eleus*, *Hysicrates*,  
*Iamblicus*,



*Iamblichus, Juba Rex Mauritanix, Malechus Bizantius, Melanibius, Menæchmus, Menetor, Pamphilus, Polemon, Porphyrius, Praxiteles, Protogenes, Theophanes, Xenocrates, and many others, the chief of whose works are now lost.*

VIII. As Arts came now into estimation, so at length Laws were established for their preservation; and punishments for their prevarication.

The beginning of these Laws was first at Argos, Ephesus, Thebes and Athens, as also in Egypt, where a workman (saith *Diodorus Siculus*) is fearfully punished, if he undertake any charge in the Commonwealth, or meddle with any trade but his own: the which Law saith *Herodotus*, the Lacedæmonians did also approve of. By means of which Laws it was, that the Artists of those nations attained to such a perfection of Art, as we shall hereafter relate.

IX. The fervent desire, and love of emulation to excel others; the commendable simplicity of Art; together with the content and satisfaction of doing something well, gave a large progress towards the advance of Art.

It was nobly said of *Scipio Africanus*, that every magnanimous spirit compares himself, not only with them that are now alive; but also with the famous men of all ages; whereby it appears that great wits are always by the sting of emulation, driven forwards to great matters; but he that by too much love of his own works, compares himself with no body, must needs attribute much to his own conceits. Dost thou desire the glory of swiftness? saith *Martial* (*in Epigr. 36. lib. 12.*) strive to out go the *Tyger*, and the light *Ostrich*; it is no glory at all to out-run *Asses*. This emulation is the source of great wits, whereby our imitation is provoked sometimes by envy, and sometimes by admiration, whereby it falls out, that the thing we earnestly seek after,

after, is soon brought to some height of perfection; which perfection consists in exact imitation, according to the simplicity of Art, and not in gaudy appearances, which adorns the shadows much more than ever nature adorned the substance. This imitation of the life gave the *Artizan* fame; which fame quickened his aspiring thoughts, adding more fuel to the flames, till such time, as he brought forth a most absolute work, whereby he conceived a joy, content and satisfaction, as durable as the work it self, upon which he now conceives himself a happy man, and through a just assurance of his vertues knows himself to be lifted up above the reach of envy, where he stands secure of his fame, enjoying in this life (as if he were now consecrated unto Eternity) the veneration that is like to follow him after his death; thus an honest *emulation* and *confidence*, bringing forth works of general applause, procureth unto its author an everlasting Glory. Now what a comfortable thing is this, to have a fore-feeling of what we hope to attain to?

X. *Another reason of the Augmentation of these Arts, was the manifold uses thereof among men, either for good or evil purposes.*

As in natural Sciences, where words come short, a little picture giveth us the knowledge of beasts, birds, fishes and other forms, as well inanimate as animate; In the *Taſticks*, how should a General know how to set his men in array, unless he try the case by design or delineation? so in *Architecture* to pourtray platforms after any fashion, and to work out the patterns of high and mighty buildings in a little wax, keeping in so small an example the exact proportion of the greater structure: In *Geometry* the exactness of Lines, Angles, Surfaces and solids: In *Botanologia*, the exact shapes of herbs, plants and trees: In *Zoologia*, the shapes of all living

living creatures : In *Anthropologia*, the exact description of all the parts of mans body both inward and outward : In *Chymia*, the forms of all chymical vessels and operations : In *the lives of illustrious men and Princes*, to express their forms and shapés to the life, that age might not prevail against them, deserving thereby ( as *Varro* saith ) the envy of the Gods themselves : In *Geography*, to describe in small maps Kingdoms, Countreys and Cities, yea the whole world : In *Policy*, as *Michal* in saving her husband *David*; *Ptolomeus* in the Image of *Alexander*, which he willingly let *Perdiccas* catch from him, supposing it to have been the body it self, thereby avoiding much blood-shed ; *Cyrus* his wooden *Persians* in the Seige of *Sardis*, by which the towns-men being frighted, yielded the City ; *Epaminondas* at *Thebes* by the Image of *Pallas* did wonders ; *Amasis* King of *Egypt*, his golden Image made of the Basin, in which his feet used to be washed, which the *Egyptians* religiously worshiped, whereby he brought them to affect him being now a King, who was of an ignoble and base parentage ; the wooden *Elephants* of *Perseus* King of *Macedonia*, with which he wonted his horses, that they might not be frighted in time of Battel. The Ornaments of Temples, Market places and Galleries, places both publick and private : *Julius Cesar*'s Image in wax, hideous to look too, for twenty three gaping wounds he received, did mightily stir up the Romans to revenge his death. Worthy men which had deserved well of the world, had their memories conserved with their Images ; by which all those that aspire to goodness, and to follow their steps, are likewise filled with hope. The *Athenians* have erected unto *Æsop* a most goodly statue, saith *Phædrus*, and have set a contemptible slave upon an everlasting base, that all might understand, how the way of honour lieth open to every one, and that glory likewise

doth not so much follow the condition of our birth, as the virtues of our life. Berosus excelled in Astrology, wherefore the Athenians for his divine prognostications, erected him a Statue with a golden tongue, set up in their publick Schools, as Pliny saith, lib. 7. cap. 37. Publick Libraries were furnished also with golden, silver and brasse Images of such, whose immortal souls did speak in those places. The provocations of vices have also augmented the Art; it hath been pleasing to engrave wanton lusts upon their cups; and to drink in Ribaudry and Abominations, as Pliny saith in the Proem of this 33 Book.

XI. The use therefore of these Arts extending it self so universally to all intents both in war and peace, it came to pass that Artificers were honoured by all sorts of men; which themselves perceiving, did still endeavour to encrease this enjoyed favour by a daily advance of their skill.

By Kings they were honoured; for Demetrius, whilest at the Siege of Rhodes, came to Protogenes, leaving the hope of his Victory to behold an Artificer. Alexander the Great came also to Apelles his shop, often accompanied with many Princes. It was his will that none but Polycletus alone, should cast his Statue in Brasse, that none but Apelles alone should paint him in colours, that none but Pyrgoteles alone should engrave him. The estimation of the Artists were also understood from the esteem and high rates their works were prized at; a picture of Bularchus, a Painter, was valued at its weight in gold by Candaules King of Lydia: Aristides was so singular in his Art, that it is reported of King Attalus that he gave an hundred Talents (which is about seventeen thousand and five hundred pounds sterling) for one of his Pictures. As much had Polycletus for one of his. Apelles had for painting the picture of Alexander the Great, three thousand and five hundred



dred pounds given him in golden coin. *Cæsar* payed to *Timomachus* eighty Talents, (about fourteen thousand pounds sterling,) for the Pictures of *Ajax* and *Medea*. Many more examples we might produce, but these may suffice; at length no price was thought equal to their worth; so *Nicias* rather than he would sell his picture called *Necyia* to King *Attalus*, who proffered him sixty Talents, (worth near eleven thousand pound sterling,) bestowed it as a present upon his Countrey.

XII. *Art meeting with such Successes, created a boldness in Artificers, to attempt even the greatest matters.*

The great *Colosses* of the antients may serve here for an example; *Zeuxis* above all the rest, hath been admired for his boldness: *Euphranor* also excelled *Parrhasius* in this kind, in that the *Thesens* of the one so infinitely excelled the *Thesens* of the other. So great an excellency of Spirit arose in the old Artificers, as not to be daunted by the authority of those, who were like to censure their works: it was a great mark they aimed at, to avoid a preposterous shame or fear. And this they accomplished by taking care, not only to give them content, who must of necessity be contented with the work; but also that they might seem admirable unto them which may judge freely without controul. So they heeded to do well in the opinion of accurate and judicious spectators, rather than to do that which liked themselves. And therefore whatsoever is dedicated unto posterity, and to remain as an example for others, had need be well done, neat, polished, and made according to the true rule and law of Art, for as much as it is likely to come into the hands of skilful Artificers, judicious censurers, and such as make a narrow scrutiny into every defect. But as it is impossible to attain to an excellency, or height of any thing without a beginning, so do the first things in going on of the work seem to be the least; the height  
of

of Arts, as of trees, delighteth us very much, so do not the roots; yet can there be no height without the roots. And therefore we shall find that a frequent and continual exercise, as it is most laborious, so it is most profitable; seeing *nature doth begin, hope of profit doth advance, and exercise doth accomplish* the thing sought after. In summ; by doing quickly, we shall never learn to do well: but by doing well, it is very likely we may learn to do quickly. To this speedy and well doing there belongeth three things, *viz.* to add, to detract, and to change. To add or detract, requireth less labour and judgment; but to depress those things that swell, to raise those things that sink, to tie close those things which are scattered, to digest things that are without order, to compose things that are different, to restrain things that are insolent, requireth double pains: for those things may be condemned, which once did please, to make way for inventions not yet thought of. Now without doubt, the best way for emendation is to lay by the design for a time, till it seem unto us as new, or anothers invention; lest our own, like new births, please us too much.

XIII. Lastly, *That which gave the greatest and as it were the last step towards the Augmentation of Art, was that free liberty which Artizans gave every one, to censure, to find fault with their works, and to mark their defects.*

It was the opinion of *Seneca*, that many would have attained unto wisdom, if they had not conceived themselves to be wise already. When *Phidias* made *Jupiter* for the *Eleans*, and shewed it, he stood behind the door, listning what was commended, & what discommended in his work: one found fault with the grossness of his nose, another with the length of his face, a third had something else to say: now when all the spectators were

were gone, he retired himself again to mend the work, according to what was liked of the greater part; for he did not think the advice of such a multitude to be a small matter, judging that so many saw many things better than he alone, though he could not but remember himself to be *Phidias*. But yet Artificers did not from hence admit their judgments generally in every thing, but they followed their directions only in *such things as did belong to their Profession*. As when *Apelles* made a work, he exposed it in a place where all that passed by might see it; hiding himself in the mean time behind the Picture, to hear what faults were marked in his works, preferring the common people, before his own judgment. And he is reported to have mended his work, upon the *censure of a Shooe-maker*, who blaming him for having made fewer latches in the inside of one of the Pantoffles, than of the other: the Shooe-maker finding the work the next day mended according to his advice, grew proud, and began to find fault with the leg also; whereupon *Apelles* could not contain himself any longer, but looking forth from behind the Picture, *bid the Shooe-maker not go beyond his last*; from whence at last came that Proverb. He is the best man that can advise himself what is fit to be done; and he is next in goodness, that is content to receive good advice: but he that can neither advise himself, nor will be directed by the advice of others, is of a very ill nature.

## C H A P. XXXVI.

*Of Painting the Face and Skin.*

**I.** *Two wayes there be of adorning the Face and Skin; the first is, by Painting: the second is, by application of excellent Cosmeticks, which gives a most natural, absolute and lasting beauty.*

The first way, which is that of Painting, is the subject matter of this Chapter.

Some may wonder, that we should meddle with such a subject as this, in this place; but let such know, the painting of a deformed face, and the licking over of an old, withered, wrinkled and weather-beaten skin, are as proper appendices to a Painter, as the rectification of his errors in a piece of Canvase: nor is there any reason but that the Artist should shew his care in the one, as well as his skill in the other, since a single deformity in the body begets a complication of miseries in the mind, and an unity of defects, a multiplication of evils. And though some think the Poets did not much amiss, to fancy the Creature to be hacht in Hell, by reason it brings with it such a torrent of dejections; yet let those darkened Souls (who are so much affrighted at its cloudy adumbrations) understand, that if it was conceived in hell, that hell was in the center of their conceptions: yet we confess, it seeks darkness, and only solaces it self in obscurity, and duskie solitudes. For such whose bodies have passed the stamp with some faults, and have missed the impressions or reflexions of beauty, which might make them delectable in humane society, ever make choice of darkness as their chief companion. Deformity is a disease esteemed the most pernicious



icious, and its issue is a matter of dangerous consequence, chiefly *obstructions to Ladies Preferment*. Now to prevent this danger, to take away these obstructions, and to deliver you from the embraces of so hideous a monster (which some esteem as a *Furie of Hell*) these *Cosmeticks* we have offered upon the *Altar* of your defects; protesting that the use of these beautifiers, will make you as fit for the entertainment of Courtiers, as ever you were before for the courtship of *Grooms or Hostlers*, and make your *rusty skins* and *ill-look'd faces*, to out-shine with a radiant lustre, the most splendid of all the *Nymphs of Diana*. Though you may look so much like the Image of death, as that your skins might be taken for your winding sheets, yet by our directions you may attain such a rosid colour, and such a lively chearfulness, as shall not only make you look like nature's workmanship, but also put admiration into the beholders, and fix them in a belief, that you are the first-fruits of the resurrection. Thus we teach you *lip-pid mortals* to retrace the steps of youthfulness, and to transform the wrinkled hide of *Hecuba*, into the tender skin of the Greatest of beauties; which then you will dull by the advance of your features, and make all conceited shadows of glory, to vanish in your presence. When once your artificial heat shall appear, others shall seem pale with envy for your perfections; and their *natural ruddiness* shall only serve them to *blush*, to see their features clouded by your splendor, who will seem like brown bread compared with *Manchet*, or rather like wooden dishes upon a shelf of *China* ware, or as another once said, like blubberd jugs in a cupboard of Venice glasses, or as earthen piss-pots in a Goldsmiths shop. By this means, your sparkling Glories, shall fire *Platonick Lovers*, so that none though as cold as *Saturn*, shall be able to resist your  
V actuating

actuating flames, but shall force the stoutest heart, to be a *Sacrifice to love*. If any remain unscorched, it must be only those leaden hearted *Cowards*, who dare not *approach* your flames, for fear of *melting*; or those undeserving soldiers of *Venus* (of a frigid constitution) who dare not so much as *look upon* your youthful fire, for fear of being burnt to ashes. But it may chance that some *Saint* or another, may condemn your *hearts* for *evil*, because you strive to make your *faces good*, and may like your *in-side* the *worse* because your *out-side* may look *so well*; yet with *Benjamin* refuse not the many messes of Pottage, nor yet the many change of Raiment (although one might well enough serve your turn) but receive them from the hands of *Joseph*, though all the rest of the Brethren be angry. Avoid not company for want of beauty, when art affords an innocent supply, but with *confidence* crucify that evil conscience, which forbids the use of a little oyl to make a chearful countenance, and the drinking of a little wine to make a merry heart. Borrow our Artificial beautifiers, and become *splendid*, that you may be fit to be gathered by the hand of some metamorphosed *Hero*; left in the garden of *Deformities*, growing *green* with *sickness*, you should be taken for *thistles*, and so crop'd by *Asses*.

## II. To cleanse the face and skin.

Before any thing be used to paint, or make the skin beautiful, it must be made very clean thus: first wash with warm water, and sweet scented wash-balls very well; then rub the face with a cloth, and wash well with water in which Wheat-bran is boiled; so is the skin prepared.

Or thus, Take *Sublimate* one ounce, glair of six eggs, boil them in a glass vessel, till they grow thick; then press out the water, with which wash the skin.

## III. To

III. To make a white Fucus or Paint.

Take Talk and powder it, by beating of it in a hot mortar, to the powdred Talk add distilled Vinegar, boil it at a gentle fire in a wide glass, let the fat froth that swims at top, be taken off with a spoon; then evaporate the vinegar, and mix the remaining cream with flegm of common Salt, or a little *Pomatum*, with which wash or anoint the face, and it will beautify it much.

IV. Another very excellent.

Take Crude Talk in powder one ounce, oil of Camphire two ounces, digest till the oil is white; it is a noble *Fucus* for Ladies faces.

V. To make the aforesaid oyl of Camphire.

Take Camphire four ounces, Bole twelve ounces, make them into balls and dry them in the Sun, then distill them in sand in a glass retort, into a receiver that hath distilled rain water therein: first there will come forth a white matter, which melts in the Alembick, and falls into the receiver, then a clearer water; and at last with a stronger fire, the oil we speak of, sweet scented, which rectified with spirit of wine will be yellow as Gold.

VI. Another excellent *Fucus* made of Pearl.

Dissolve Pearl in distilled Vinegar; precipitate with oyl of *Sulphur per Campanum*; then sweeten and digest with spirit of wine; abstract the spirit, and you have a magisterial *Fucus* will melt like butter.

VII. To make the best *Fucus* or Paint as yet known.

Take Venetian Talk, cleave it into slices, digest it in the heat of the Sun, or of a horse-dunghil for a month, with distilled vinegar, made of Spanish wine, adding every day new distilled Vinegar to the former, till the Vinegar be mucilaginous; which then distill by a luted retort and a large receiver with a na-

ked fire. First there comes forth the Vinegar; then a white oil; which separate. After you have cleansed the skin by the second Section, then first wash with the vinegar, after anoint with the oil: if the face be first well wash'd from all impurity, this one anointing may hold for a month without fading. *This Cosmetick if rightly prepared, is worth about five pound an ounce.*

VIII. *An excellent Fucus made of a Bulls gall.*

Take Bulls galls dried in the Sun, whose tincture extract with spirit of wine, with which besmear the face, (being cleansed by the second Section) leaving it on for three or four days, without going abroad, or exposing the skin to the air: at the end of the time cleanse the face by the second Section: so almost to a miracle, the skin of the face and neck is rendered most gratefully white, soft, delicate and amiable. This is the *Spanish Fucus* which several Ladies now use.

IX. *To make an excellent red Fucus.*

Make a decoction of red Sanders in double distilled vinegar, adding a little Alom, with a few grains of Musk, Amber-griese, or of some sweet Spices, and you will have a perfect red *Fucus* for the face.

X. *Another very excellent.*

Take juice of Clove-gilliflowers, with which mix a little juice of Limons: with this paint your face, and you shall have a pleasing red colour.

Make a strong infusion of Clove-gilliflowers in recti-

XI. *To do the same another way.*

fied spirit of wine, adding a few drops of oil of Vitriol; or instead thereof a little Alom, and the juice of a Citron or Limon; so shall you have an excellent colour to beautifie the face with.

XII. *A Fucus or Paint not easie to be discovered.*

Take seeds of Cardamoms or grains of Paradise, Cubebs, Cloves, and raspings of Brazil, which infuse in  
rectified



rectified spirit of wine for ten days, over a gentle heat; then separate the spirit: this is so perfect a Fucus, that it may deceive any man, for this clear water gives a fresh, red, and lovely colour which will last long.

**XIII. A Fucus or Cosmetick of river Crabs.**

Takes of the flesh which remains in the extremities of the great claws of river Crabs ( being boiled ) a sufficient quantity, which dry gently, and then extract a deep tincture with rectified spirit of wine; evaporate part of the *menstruum*, till the tincture have a good thickness or body; with which ( the skin being cleansed ) anoint the cheeks first, applying over it some other albifying Cosmetick.

**XIV. Spanish wool, wherewith women paint their faces red.**

Boil shearings of Scarlet in water of quick-lime half an hour, of which take two pound, to which put Brazil two ounces ( rasped ) Roch Alom, Verdigrise, of each one ounce, Gum Arabick two drachms, boil all for half an hour, which keep for use.

**XV. To do the same another way.**

Take Spirit of wine one pound, Cochinele half an ounce, rasped Brazil one ounce, Gum Armoniack three drachms, mix and digest till the Gum is dissolved; then boil it gently, and strain it for use, into which you may put old linnen rags, or Spanish wool at pleasure.

**CHAP. XXXVII.**

*Of Cosmeticks which beautifie without any thing of Paint.*

**I. A Nexcellent Cosmetick or Liquor of Talk.**

Take powder of Talk ( made by rubbing it with pumice stones; or beating it in a very hot mortar; or filing it with a Goldsmiths smoothing file ) eight

Ounces, *Salis Tartari* sixteen ounces, calcine it twelve hours in a wind furnace, and set it in a Cellar, separating that which melts, from that which doth not: then calcine this dry Calx added to four times its weight of Sal nitre, with a strong fire, so the Talk will be melted into a clear white mass which being set in a Cellar will turn to a clammy liquor.

*This wonderfully whitens and beautifies the skin, and takes away spots and freckles from the face: but you must not leave the liquor long on, but wash it off with decoction of wheat bran, that it corrode not the skin.*

II. *To make the skin soft and smooth.*

The face being very clean by the second Section of the six and thirtieth Chapter, wash it very well with a *Lixivium* of Salt of Tartar, and after that anoint it with *Pomatum*; or which is better, oil of sweet Almonds, doing this every night going to bed. The *Pomatum* we have taught the way to make in our *Synopsis Medicina*, lib. 3. cap. 58. Sect. 2.

III. *A water to cleanse the face from Scurfe and Morpew.*

Take distilled rain water six ounces, juice of Limons twelve ounces, mix them, and wash with it morning and evening, anointing after it at night going to bed with the oil or *Pomatum* aforesaid.

IV. *An Unguent which brings the skin to an exquisite beauty.*

Take of our *Pomatum* one ounce, Salt of Tartar one drachm, Musk twenty grains, mix them well, and (the face or skin being very clean) anoint morning and evening.

V. *A wonderful Cosmetick of great worth.*

Take white Tartar twenty ounces, Talk, Salt, of each ten ounces, calcine them in a potters furnace very well; then grinding the matter upon a marble, put it into

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into *Hippocrates* his sleeve, and set it in a Cellar or other moist place for twenty or thirty dayes, and there will drop from it a precious oil; which being rubbed upon the skin softly with a linnen cloth (the skin being duly cleansed first) takes away all kind of spots, and makes the skin soft and delicate.

*VI. A cheap, yet excellent Cosmetick.*

Take Alom in fine powder, and shake it with whites of new laid eggs, being a little heated, till such time as they grow thick to an ointment, with which anoint the face morning and evening three or four days; and it will take away spots and wrinkles, and make the skin grow clear and fair.

*VII. An excellent Mercurial Cosmetick prevalent against most deformities of the skin.*

Take Mercury purified from all blackness half a pound, Mercury *Sublimate* in powder as much, mix them in a stone or marble mortar; put them into an Alembick of a straight Orifice, put on distilled Vinegar, till all be covered three or four fingers, letting it stand four dayes, daily stirring the same at certain times, then it extracts a whitish powder; the whitish Vinegar by inclination separate, rejecting it, and put on other Vinegar: the powder at bottom keep so for some days: which labour you must so often reiterate, till you have abundance of that white powder, which dry, and keep for use: anoint with it, by mixing with it a little distilled rain water, and it will take away all blemishes of the skin, as also Tetters. Use it not too often, and beware you touch neither eyes nor teeth with it.

*VIII. Another of great estimation.*

Take Mercury *Sublimate*, *Saccharum Saturni* of each two drachms, Rose water, juice of Limons of each two ounces, mix them like to an ointment, with which anoint gently at night, and the next morning with the Pomatum aforesaid.

IX. To make a kind of *Lac Virginis*, an excellent Cosmetick.

Take distilled rain water a quart, *Saccharum Saturni* crystallized one ounce, mix them, and then wash with the water, being settled: the fine white powder at bottom, is also an excellent fucus or paint, which may be laid upon the skin if very clear: note, some use Vinegar instead of the rain water.

X. To make *Oleum Tartari per deliquium*.

Take Salt of Tartar, which put into a bag with a corner in a moist Cellar, and the oil will distil therefrom in drops: with this oil you may mix a little fair water, and wash your face at night going to bed; and the next morning, the face being very clean, you may wash with the aforesaid *Lac Virginis*; thus continuing for some days, you may create an exquisite and lasting beauty.

XI. A compound Cosmetick esteemed by some of great force.

Take of the aforesaid *Lac Virginis* one ounce, oil of Tartar aforesaid half an ounce, mix them, with which wash morning and night for about a week or more, as you shall see occasion; then anoint with the following ointment.

XII. To make the Cosmetick Ointment aforesaid.

Take Musk three drachms, Ambergriese two drachms, Civit one drachm, grind them upon a porphyre or marble stone, with oil of Ben and Rhodium of each three ounces, with which anoint as aforesaid: note, some instead of the oil of Ben, use oil of sweet Almonds.

XIII. A vegetable Cosmetick.

Besmeare your face or skin at night going to bed, with the juice of Wake Robin; it is excellent.

XVI. An incomparable Cosmetick of Pearl.

Dissolve Pearls in juice of Limons or distilled Vinegar

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Vinegar, which digest in Horse-dung, till they send forth a clear oil, which will swim on the top: this is one of the most excellent Cosmeticks or Beautifiers in the world: *this oil if well prepared is richly worth seven pound an ounce.*

XV. *A Cosmetick ointment of great worth.*

Take of our Pomatum aforesaid six ounces, Saccharum Saturni two ounces, mix them, and anoint morning and evening.

XVI. *Another very good for the skin.*

Mix Saccharum Saturni one drachm, in Vinegar half an ounce, which mingle with the glair of eggs, and anoint with it.

XVII. *A Cosmetick wonderful to make a pleasing ruddy complexion.*

Take oil of Tartar four ounces, Alom, Sal Gem, of each one ounce, Borax, Camphire of each half an ounce, beat them well together, to which add of Briony water a pint, distil them in balneo, and you will have your desire.

XVIII. *Another for the same.*

Take Madder, Myrrh, Saffron, Frankincense, of each alike, bruise and steep all in White-wine, with which anoint the face going to bed, and in the morning wash it off, and the skin will have a gallant pleasing blush.

XIX. *To make the Cosmetick of Myrrh, very excellent.*

Boil eggs till they are hard, slit them and take out the yolks, fill them up with powdred myrrh, close them together, and lay them in a moist Cellar, and the myrrh will dissolve into oyl.

XX. *To make a very good Wash to whiten the skin, and give a good complexion.*

Take Limons, hens eggs boiled, of each twelve,  
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Turpentine eight ounces, distil all in *Balneo Mariae*, with which wash: when you wash, you may drop into it a drop, two or three of oil of Oranges or Cinamon, for fragrancy sake.

XXI. *A Cosmetick to make a rough skin smooth.*

Take sweet Almonds blanched four pound, moisten them with spirit of wine and rose water mixt together, of each two ounces, beat them together and try them; and when they begin to smook, put them into a bag, and press them (in a press made for that purpose) and there will come forth a very clear oil; which put into rain water, and beat it till it is exceeding white.

## CHAP. XXXVIII.

*Of Cosmeticks, which remedy the various Vices of the skin.*

I. *To take away Sun-burnings.*

To glair of ten eggs put Sugar-candy one ounce and anoint with it going to bed: or anoint with the juice of Sow-bread at night going to bed; & in the morning with oil *Omphacine*. The like effects hath our *Lac Virginis* at the ninth Section of the seven and thirtieth Chapter, as also *Oleum Tartari*, and other things of like nature.

II. *To take away redness and Pimples.*

First prepare the skin by bathing it often with the decoction of wheat-bran, and applying pultisses of bread, milk and oil thereto: when the skin is thus suppld and rarified, you may cure them either by our liquor of Talk at the first Section of the seven and thirtieth Chapter,

Chapter, or mercurial Cosmetick at the seventh Section of the seven and thirtieth Chapter, or our *Lac Virginis* and oil of Tartar at the ninth and tenth Section of the seven and thirtieth Chapter, or by often washing with juice of Limons.

III. To take away Freckles.

Take juice of Limons, put it into a glass bottle, to which put fine Sugar and *borax* in powder, digest it eight dayes in Sand, then use it; or mix *Sal Tartari* with whites of eggs, and apply it; or often use our compound Cosmetick at the eleventh Section of the seven and thirtieth Chapter, or oil of Tartar alone, for some weeks; but if all fail, you must have recourse to our Liquor of Talk at the first Section of the seven and thirtieth Chapter, or Mercurial Cosmetick at the seventh Section of the seven and thirtieth Chapter.

IV. To take away Spots from the face or skin.

This is done by anointing with oil of Tartar for ten days; and after all that to wash it with a *Lixivium* of *Quicklime* in which *Sal armoniack* hath been dissolved for a long time: or you may use the Cosmetick at the third Section of the seven and thirtieth Chapter camphorated.

V. To cleanse a scurffy Skin.

If the creature be fat, foment first with a *Lixivium* of Salt of Tartar; but if lean, make a fomentation of Borrage, Bugloss and Mallow leaves, which use for some days: this being done, bath the place where the scurff is, with *Spiritus Nicotiana* made by fermentation, which being dried in, anoint first with oil of Tartar, then with oil of Almonds; repeating the three last works, so often till the scurff goes away.

If all these fail, you must have recourse to our liquor of Talk, or Mercurial Cosmetick; or those at the fifth and eighth Section of the seven and thirtieth Chapter, which  
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without doubt will perform your desire:

VI. *To free the Skin from Tettors and Ring-worms.*

Dissolve *Sublimate* one ounce in a glass of Red-wine by boiling, with which wash the place morning and evening, letting it dry of it self, for three or four days together, and it will certainly cure: if they be not inveterate, our liquor of Talk at the first Section of the seven and thirtieth Chapter, or Mercurial Cosmetick may sufficiently do; or you may anoint with this ointment. Take *Sal Tartari* two drachms, burnt Alom three drachms, powder and incorporate with whites of eggs: or this, take *Sulphur vive* three drachms, Camphire one drachm, Hogs-griese two ounces, mix and make an ointment.

VII. *To take away wrinkles from the Skin.*

Take oil of Almonds, lees of oil Olive, and make them into an ointment with wax, powder of Camphire and Mastich, with which anoint. Oil of Myrrh to anoint with, is eminent in this case: or wash with a decoction of Briony roots and figs of each alike: or dissolve Gum Tragacanth in *Lac Virginis*, and wash with that. Excellent good is a strong decoction of Pomegranate pills in White-wine, to wash often with.

VIII. *To take away Warts.*

The juice of the greater Spurge with Salt anointed, takes them away, so also a continual washing with a Lixivium of Quicklime and Salt of Tartar. The juice of *Verrucaria* performs the same. A plaister of *Cantharides* with a defensative is very good in this case: so also this following wash: take *Saccharum Saturni* three ounces, *Sal Armoniack* one ounce, Vitriol common six drachms, Quicklime eight ounces, boil all in water four pound to the consumption of the half, with which often bath the warts, and then wash with our Mercurial water.

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water. Black Soap hath often been found very good ; but especially a plaister of Turpentine.

IX. To heal Chaps in the Skin.

Our *Pomatum* in this case is most excellent : yet this following is commendable. Take Capons grieve mixed well with Camphire, and anoint with. Oil of Turpentine two drachms, mixed with *Unguentum Populeon* two ounces, is very good. So also oil of Roses mixed with Sheep Suet and wax to an ointment.

X. To heal Burnings and Scaldings.

Excellent good is the *Unguentum Rubrum* in our *Synopsis Medicinæ lib. 3. cap. 58. Sect. 1.* both to draw out the fire, and to heal. To draw out the fire also, glair of eggs mixed with Rose water, is very prevalent : so also is Salt, raw Onions, Soap, Yest, Oil of Tartar and the like. To hinder the rising of the blisters, Hens dung three ounces, mixed with hogs grieve four ounces, and Salt of Tartar one ounce is very good ; so also a cataplasme of Honey and crums of bread ; but best of all a plaister of strained *Opium*, which performs all the intentions to admiration. If the blister break, it may be presently skinned by anointing with oil of eggs, and washing often with *Lac Virginis*, strewing upon the sore, powder of Bole, Tutty, Ceruse or the like.

XI. To take away scars and marks of the Small Pox.

Take of oil of Tartar one ounce and half, Ceruse dissolved in oil of Roses one ounce, *Borax* and *Sal Gemi* of each one drachm, mix and make an ointment, with which anoint. Oil of Tartar alone performs this work well : so Salt of Tartar, mixed with powder of Mirrh and oil of Roses.

XII. To beautifie the Hands.

To make them soft, often anoint with the oil of Almonds or our *Pomatum* at night going to bed, washing them

them the next morning with decoction of wheat-bran : after a while wash them with Salt of Tartar, dissolved in fair water, perfumed with oil of Cloves, Oranges, Rhodium or Cinnamon. Or this, take Venice Soap dissolved in juice of Limons one pound, Virgin-honey four ounces, Sublimate, Orice root, Sugar, Salt of Tartar, Alom, Borax of each one ounce, Balsom of Peru two drachms, oil of Cloves one drachm, oil of Rhodium and Cinnamon of each half a drachm, make a mixture to wash the hands withal : Or this, take powder of Venice Soap one pound, Orice root eight ounces, *Amylum* six ounces, mix them and make an ointment with *liquid Storax* and oil of Benjamin a sufficient quantity ; it wonderfully whitens, smoothes and sweetens the hands. To anoint also with a Bulls gall is very good.

XIII. *To help hands which are swollen, and look red or blew with cold.*

What we even now said ( in the last Section ) may be said again here : to which we add, that a long bathing of them in a lather of Castile Soap, is very good if it be done : or if a repercussive plaister be applied made of barley meal, *Saccharum Saturni*, and oil of Myrtles ; washing ( after the coming off of the Cataplasme ) with juice of Limons or white wine Vinegar : a plaister of Turpentine mixed with Salt is good. Often to anoint the hands with oil of Roses, Almonds, or *Pomatum* at night, and the next morning with the *Lac Virginis* prevails much. Oil of Anniseeds, Caraways and Fennel prepared chymically, as also Cloves and Oranges, mixed with oil of Almonds and often used, are eminent above all other things.

## CHAP. XXXIX.

## Of making a Sweet Breath.

I. A Stinking Breath comes from one of these four causes, viz. putrified Lungs, defective Teeth, a distemper of the Head, or obstruction of the Stomach.

II. To remedy a Stinking Breath coming from putrified Lungs.

Take *Unguentum Nicotiana* one ounce, *Oleum Succini* two drachms, mix them and anoint the breast outwardly; inwardly give cleansers, (as oil of Sulphur allayed with Rose water) morning and evening; as also *Antimonium Diaphoreticum* ten grains five times a day for several days together; then heal by giving oil of Almonds mixed with a few drops of oil of Cinnamon, or Pills of Turpentine: Lastly, morning, noon and night let this bolus be adhibited; take Nutmegs, Mace, Ginger, of each fifteen grains, honey two drachms, oil of Cinnamon ten drops, mix them, and continue it for some weeks.

III. To help the defects of the teeth.

1. If the teeth be furred over, rub them every morning with *cremor Tartari* in powder, and wash them with White-wine. 2. If the teeth be black; allay oil of Sulphur or Vitriol in Rose water, and scower them well therewith, with the end of a stick and a rag, till all the blackness be gone; then rub them with oil of Almonds perfum'd with oil of Cinnamon. 3. If the teeth be loose, first rub them with this powder, take Galls, Pomgrate flowers, Sumach, Cyperus, of each one ounce, Roch Alom half a pound, powder them all for use: then use this Gargarisme. Take Galls one ounce, Myrrh,

Myrrh, Pomgranaate peels of each half an ounce, boyl them in white wine vinegar for a Gargarism. Lastly, morning, noon and night wash the gums with good red Wine; by this means the teeth will be fastned and the gums restored. 4. *If they be in danger of rotting*; take ashes of Harts-horn, magistery of Corral of each one ounce, musk, or instead thereof oil of Cinnamon, ten grains, mix for a dentifrice to rub the teeth withal, it will keep them white and sound. 5. *If they be rotten and hollow*; make little pellets of strained Opium, Myrrh and oil of Cinnamon, and put them into the hollow tooth. 6. *If they ach*; use the aforesaid pellets, or make little ones of *Lindanum Paracefi*, and put them into the hollowness: or if they be not hollow, tye a little pill of the same up in a fine thin rag, and hold it between the aking teeth. 7. *If they stink*; often wash them with wine or spirit of wine, in which a few drops of oil of Cinnamon and *adepts Rosarum* is dissolved.

IV. *To rectify a Stinking Breath arising from distemper of the head.*

Consider the cause of the distemper, whether it arises from the Pox, Imposthumes, or the like, and follow the method instituted in the Cure of those diseases, and then the cause being taken away, the effects you will find will soon cease; yet nevertheless these following pills are excellent: take *Calx* of refined Silver made by spirit of Nitre, and well dulcified by washing in warm rain water one ounce. *Resina Scammonii* one ounce and half, mix them for a mass of pills, of which take eight or ten grains at night going to bed every third, fourth or fifth day.

V. *To rectifie a Stinking Breath arising from the obstruction of the Stomach.*

This is done by opening and cleansing the Stomach thus

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thus. Take every morning going to bed half a drachm of *Pil. Ruffi* for ten or twelve days together : or thus, first vomit with *Vinum Benedictum* one ounce or more, according as Strength requires, twice or thrice; then take *Pilula Rudii* half a drachm at a time, in the morning fasting, drinking after it some warm broth or posset drink, which repeat every third or fourth day four or five times.

VI. To rectifie the Breath, when it smells of any thing that is eaten.

Chew Coriander seed or Zedoary in the mouth, drinking a good draught of wine after; the scent of the wine is taken away by eating four apples or Quinces, or by chewing troches of Gum Tragacanth perfumed with oil of Cinnamon.

## CHAP. XL.

### Of beautifying the Hair,

#### I. TO Dye the Hair black:

This is done with the *Calx* of *Lime* (made by Spirit of Nitre) mixed with fair water, and the hair washed therewith, with a Sponge: it is the most excellent thing of that kind that is yet known.

#### II. To keep the hair from falling off.

Take Myrtle berries, Galls, Emblick Myrobalans of each alike, boil them in oil Omphacine, with which anoint: it is an excellent Medicine, yet as old as *Galens*.

#### III. To remedy Baldness.

This is a hard thing to cure, yet the following things are very good. Rub the head or bald places every morning very hard with a course cloth, till it be red, anointing immediately after with Bears grieve: when

ten or fifteen days are past, rub every morning and evening with a bruised Onion, till the bald places be red, then anoint with honey well mixed with Mustard seed, applying over all a plaister of *Labdanum* mixed with mice dung, and powder of Bees: do this for thirty days. If all the former fail, bath with a decoction of Bur-dock roots, made with a Lixivium (of Salt of Tartar) two parts, and muskadel one part; immediately applying this Unguent: take *Thapsi* or *Turbeth* one drachm (in powder) bears grieve one ounce, mix them, which use for sixty days; if this make not the hair come, the defect is incurable.

IV. *To take away hair from places where it should not grow.*

Take Quicklime four ounces, *Auripigmentum* one ounce and a half, *Sulphur vive*, Nitre, of each half an ounce, *Lixivium* of Salt of Tartar a quart, mix and boil all so long in a glazed earthen pot, till putting a quill therein, all the feathers peel off, and it is done. First foment the place with warm water a little before you use the aforesaid medicine; a quarter of an hour after wash with very hot water; then anoint with the aforesaid Unguent, and in a quarter of an hour it will do the work: when the hairs are fallen away, remember to anoint with oil of Roses; now to keep them from ever growing again, anoint for some days with an ointment made of the juices of Henbane and Nightshade, *Opium* and Hogs grieve.

V. *To make the hair curl.*

Wash the hair very well with a *Lixivium* of Quicklime, then dry it very well, that done anoint it with oil of Myrtles, or oil *Omphacine*, and powder it well with sweet powder, putting it up every night under a cap: if the party be naturally of a cold and moist constitution, the washing, anointing and powdring must be perpetually

perpetually used once or twice a week during life, the hair being put up every night.

VI. *To make hair lank and flat that curls too much.*

Anoint the hair thoroughly twice or thrice a week with oil of Lillies, Roses, or Marsh mallows, combing it after it very well.

VII. *To make the hair grow long and soft.*

Distil Hogs-griese or oil Olive in an Alembick; with the oil that comes there-from anoint the hair, and it will make it grow long and soft: use it often.

VIII. *To preserve the hair from splitting at ends.*

Anoint the ends thereof, with oil Omphacine, or oil of Myrtles, they are eminent in this case to preserve the hair from splitting, so also an ointment made of Honey, Bees wax and oil Omphacine or Bears griese.

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C H A P. XLI.

*Of the Art of Perfuming in general.*

I. **I**N this Art two things are to be considered, *viz.*

1. The way and manner of making of Perfumes.

2. The way and manner of Perfuming.

II. The Perfume it self is considered, 1. In respect of its Form. 2. In respect of its Composition.

III. The Form of the Perfume is either Water, Oil, Essence, Unguent, Powder, or Tablets.

IV. The Making and Composition is taken from the Form and matter.

V. The Matter is either Vegetable, Animal or Mineral.

VI. The way of Perfuming is according to the matter to be perfumed.

VII. The matter to be perfumed is either natural, as Hairs, Skins, Cloaths, Air, &c. or Artificial, as Pomanders, Powders, Wash-balls, Soaps, Candles, and other things of like nature.

## CHAP. XLII.

*Of the Matter of which Perfumes are made.*

I. **T**He ground of *Vegetable Perfumes*, is taken from *Flowers, Seeds, Herbs, Roots, Woods, Barks and Gums.*

II. The chief *Flowers* for this use, are of Clove-Gilliflowers, Roses, *Jasemin*, Lavender, Oranges and Saffron.

III. The chief *Seeds* or fruits are Nutmegs, Cloves, Carrawaies, Grains, Seeds of *Geranium Moschatum*, and the Nut Ben.

IV. The chief *Herbs* are *Geranium Moschatum*, Basil, sweet Majoram, Tyme, Angelica, Rosemary, Lavender, Hyssop, sweet Trefoyl, Mint and Bay-tree leaves.

V. The chief *Roots* are of *Calamus Aromaticus*, Ginger, China, *Caryophyllata*, Indian Spicknard and sweet Orrice or Iris.

VI. The chief *Woods* are of yellow Sanders, *Xylbalsamum*, *Lignum Aloes*, and *Rhodium*.

VII. The *Barks and Peels* are of Cinnamon, Mace, Oranges, Limons and Citrons.

VIII. The chief *Gums* are Frankincense, *Olibanum*, Labdanum, Styrax, liquid Styrax, *Balsamum Verum*, Ambergrise, *Styrax Calamita*, Benjamin, Amber, Camphire:

IX. The chief matters of Perfumes taken from *Animals*, are Musk, Zibet, Cow-dung and other turds.

IX. Of



X. Of *Minerals* there is one only, which yields a Perfume, and that is *Antimony*.

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CHAP. XLIII.

*Of the Oil of Ben.*

I. **T**He little Nut which the Arabians call *Ben*, is the same which the Latins call *Nux Unguentaria*; and the Greeks *Balanos Myrepsta*; out of which is taken an Oil, of great use in the Art of Perfuming.

II. *To make the Oil of Ben.* Blanch the Nuts, and beat them very carefully in a mortar, and sprinkle them with wine, put them into an earthen or Iron Pan, and heat them hot, then put them into a linnen cloth, and press them in an Almond press; this work repeat, till all the Oil is extracted, so have you Oil of *Ben* by expression.

III. In like manner you may express the Oil out of Citron seeds, incomparable for this purpose, to extract the scent out of Musk, Civit, Amber and the like, because it will not quickly grow rank, yet Oil of the *Nut Ben* is much better.

IV. This Oil of *Ben* hath two properties; the one is, that having no scent or odour of it self, it alters, changes or diminishes the scent of any Perfume put into it: the other is that it is of a long continuance, so that it scarcely ever changeth, corrupts or putrifies, as other Oils do.

V. To make a Perfume thereof, put the Musk, Amber, &c. in fine powder thereinto, which keep in a glass bottle very close stopped, for a month or more, then use it;

VI. Or thus, Blanch your Nuts, and bruise them, ( Almonds may do though not so good ) and lay them between two rows of Flowers, suppose Roses, *Jasmin*, &c. or other Perfumes; when the Flowers have lost their scent and fade, remove them, adding fresh ones; which repeat so long as the Flowers are in season; then squeez out the oil, and it will be most odoriferous.

VII. Lastly, by this last you may draw a sweet scent out of those Flowers, out of which you cannot distil any sweet water.

## CHAP. XLI.

### Of sweet Waters.

#### I. *The first sweet Water.*

Take Cloves in powder two drachms, yellow Sanders, *Calamus Aromaticus* of each one scruple, *Aqua Rosarum Damascenarum* fifteen pound, digest four days, then distil in an Alembick; to this new distilled water put in powder Cloves, Cinnamon, Benjamin, *Storax Calamita* of each one drachm, distil again in *Balneo*; lastly put the water into a glass bottle with Musk and Ambergriese of each ten granis, keep it close stoppt for use.

#### II. *The second sweet Water.*

Take Damask Roses exungulated three pound, Flowers of Lavender and Spike of each four ounces, Clove-gilliflowers, and Flowers of *Jasmin*, of each two pound, Orange-flowers one pound, Citron peels four drachms, Cloves two drachms, Cinnamon, *Storax Calamita*, Benjamin, Nutmegs, of each two scruples all in powder, *Aqua Rosarum* six pound, digest ten days,

days, then distil in *Balneo*: to the distilled water add of Musk and Ambergriese of each thirty grains.

III. *The third sweet water.*

Take Roses, Clove-gilliflowers of each one pound, Flowers of Rosemary, Lavender, *Jasemin*, Majoram, Savory, Time, of each three ounces, dry Citron peels one ounce, Cinnamon, Benjamin, *Storax Calamita*, of each two drachms, Nutmegs, Mace, of each one drachm, bruise the Herbs and Spices well, digest in the Sun two days, then distil in *Balneo*: to the distilled water add Musk in powder one scruple.

IV. *The fourth sweet Water.*

Take Cloves, Cinnamon of each one drachm, Mace, Grains, Musk, Ambergriese, Citron peels of each half a scruple, Benjamin, *Storax Calamita* of each one scruple, *Aqua Rosarum* twelve pound, digest fifteen days, then distil in *Balneo*.

V. *The fifth sweet Water.*

Take Rosemary-flower water, Orange-flower water of each five pound, Ambergriese one scruple, digest ten days, then distil in *Balneo*.

VI. *The sixth sweet Water.*

Take Roses two pound, Macaleb half a drachm, Ambergriese ten grains, bruise what is to be bruised, digest in sand three days, then distil in *Balneo*.

VII. *The seventh sweet Water.*

Take green peels of Oranges and Citrons of each four drachms, Cloves half a drachm, flowers of Spike six ounces, *Aqua Rosarum Damascenarum* six pound, digest ten days, then distil in *Balneo*.

VIII. *The eighth sweet Water.*

Take of the water at the fifth Section six pound, Musk ten grains, mix and digest them for use.

IX. *The ninth sweet Water.*

Take *Aqua Rosarum*, *Aqua Florum de Jasemin* of each

four pound, Musk one scruple, digest ten days, then distill in sand.

X. *The tenth sweet Water.*

Take Damask-rose, Musk-roses, Orange-flowers of each four pound, Cloves two ounces, Nutmegs one ounce, distill in an Alembick, in the nose of which hang Musk three scruples, Amber two scruples, Civet one scruple, tyed up in a rag dipt in bran, and the white of an egg mixed.

XI. *The eleventh sweet Water, called Aqua Nanfa or Naphe.*

Take *Aqua Rosarum* four pound, Orange-flower water two pound, waters of Sweet Trefoyl, Lavender, Sweet Majoram of each eight ounces, Benjamin two ounces, storax one ounce, Labdanum half an ounce, Mace, Cloves, Cinnamon, Sanders, Lignum Aloes of each one ounce, Spikenard one ounce; all being grossly beaten, digest a month, then in a glass retort distill in *Balneo*.

XII. *The twelfth sweet water, called Aqua Moschata.*

Take spirit of Wine two pound, Musk three scruples, Amber two scruples, Civet one scruple, digest in the Sun twenty days close stopped in a glass vessel; a drop of this water put into any other liquor, will ~~way~~ perfume it.

*So may you extract the scent out of sweet Flowers, with this difference, that they lie but a little while, because their earthy substance will make the spirit ill-savoured.*



## C H A P. XLV.

## Of Perfuming Oils.

**I.** *To make Perfuming Oils by infusion.*

**II.** This is taught fully at the fifth Section of the three and fortieth Chapter aforegoing.

**II.** *To make Oleum Imperiale.*

Take Ambergrise four drachms, *Storax Calamita*, eight ounces, Rose-water, *Oleum Rosatum* of each two pound, Oil of Cinnamon and Cloves of each half a drachm, put all into a glass, and digest in horse dung twenty days : this done gently boil all for a quarter of an hour, which then let cool ; with a spoon take off the Oil which swims a top, to which put of Musk and Zibet of each two drachms, digest all in a gentle heat for twenty days, and keep it for use. Where note the Amber and Storax at bottom will serve to make sweet balls of, to lay among cloaths ; or beads to carry in ones hands ; or for a perfume to burn.

**III.** *To make Oil of Cinnamon.*

Digest Cinnamon grossly bruised in spirit of Wine, sharpned with oil of Salt, in a glass vessel, with a blind head closely luted, in a gentle heat for ten days, then distil in an Alembick as we have more at large taught in our *Synopsis Medicinæ lib. 3. cap. 47. Sect. 1.* it is a wonderful Perfume, the most fragrant and pleasant of all Oils, as well in tast as smell : the use of it will certainly take away a stinking Breath.

**IV.** *To make Oil of Roses, called adeps Rosarum.*

Take Damask Roses, pickle them with Bay salt, and after three months, with a large quantity of water distil in ashes with a gentle fire, so have you Oil,  
and

and Spirit or water, which keep for other distillations.

*Weckerus* hath it thus.

*Rosarum folia* in umbra aliquandiu asservata, in matula vitrea magna ponuntur, cujus sit fundus latus, & ad dimidium vas impletur: inde affunditur ipsis *Rosarum foliis* tantum aquæ rosaceæ stillatiæ, quantum satis fuerit, ut optimè madeant: appositæque pileo vitreo ceco, stipatisque optimè rimis cera gummata, quindecim diebus equino fimo macerantur: sic tamen, ut mutato, cùm frigescere cæperit, fimo, calor æqualis servetur. Apposito mox matula rostrato pileo, igne moderato cinerum, aqua omnis elicitur: quæ rursus in eadem matula, optimè prius à fæcibus mundata, ablutæque ponitur, & calentis aquæ balneo lentissimo igne elicitur, dum tota in vas recipiens abeat. Nam in fundo matule remanebit oleum rosarum, colore rubrum, perspicuum, & Moschi odore suaviter fragrans.

This is the greatest of all vegetable perfumes, and of an inestimable value.

V. *To make Oil of Calamus Aromaticus.*

It is made as oil of Cinnamon: it is a very great perfume, helps a stinking breath, vomiting, weak memory, &c.

VI. *To make Oil of Rhodium.*

It is made as oil of Cinnamon; is a very excellent perfume, good for the head, breath and the senses.

VII. *To make Oil of Indian Spicknard.*

By infusion it is made by the first Section; by distillation, as oil of Cinnamon. It is an eminent Perfume.

VIII. *To make Oil of Benjamin.*

Take Benjamin six ounces in powder, which dissolve in oil of Tartar and Aqua Rosarum of each one pound, which distil with a close pipe in an Alembick. So is made oil of Storax and Labdanum.

IX. *To make oil of Storax compound.*

Take oil of Ben, or sweet Almonds one pound,  
Storax

Storax grossly beaten four ounces, Benjamin, Cloves of each two ounces, digest (till the Gums are melted) over hot coals; then press out the oil diligently.

## CHAP. XLVI.

### Of Perfuming Essences.

**I.** The way to extract Essences is somewhat difficult, viz: by Distillation, Calcination, Digestion or Menstruum.

**II.** If by Menstruum, use not a watry one for a watry essence; nor an oily one for an oily essence; because being of like natures, they are not easily separated; but on the contrary, chuse an oily Menstruum for a watry essence, and a watry Menstruum for an oily essence.

**III.** If the essence of any metal be to be extracted by a corrosive menstruum, after the work is done, separate the salts from the waters, and use only those salts which will be easily taken out again; Vitriol and Atom are very difficult to be separated by reason of their earthy substance.

**IV.** To extract the essence out of Musk, Ambergrise Civet, and other Spices or Aromaticks.

Mix the perfume with oil of Ben, which in a glass bottle set in the Sun or Sand for ten days, then strain it from the dregs, and the essence will be imbibed in the oil. Then take spirit of Wine, and distilled fountain water, which mix with the said oil, and digest for six days: then distil in sand; so will the essence and water ascend, (the oil remaining at bottom without any scent) that essence and water distil in Balneo in a glass vessel,

vessel, till the water be come off, and leave the essence in the bottom in the form of oil.

V. *Another way to do the same.*

Infuse the matter in spirit of Wine a sufficient quantity, digest and ferment for ten days, then distil in sand, as long as any water will come over (but have a care of buring) which distilled Liquor draw off in *Balneo*, with a very gentle heat, and the quintessence will be left in the bottom, of a liquid form.

VI. *To extract the essence out of Herbs and Flowers, as of Sweet Majoram, Basil, Orange-flowers, Jasemin, &c.*

Bruise the matter, and put it into a glass vessel to ferment in Horse-dung for a month; then distil in *Balneo*; set it in dung for a week again, and distil in *Balneo* again; which reiterate so long as it will yield any liquor; put the distilled matter upon the *Caput mortuum*, distilling thus for six days: draw off the water in *Balneo*; and the essence remaining express in a press: which being a week fermented in dung, will yield the perfect scent, colour and vertues of the matter desired.

VII. *To extract the essence out of Salts.*

Calcine the Salt, and grind it very small, then lay it upon a marble in a moist Cellar, setting under it a pan to receive the dissolution; therein let it ferment for a month, then with a gentle fire distil in *Balneo*: cast away the insipid water, which comes from it; and set that which remains in the bottom, to ferment another month, then distil out the insipid water as before; repeating this work so long as any insipid water may be drawn: then evaporate away all the moisture, and what remains is the quintessence of Salt.

Where note 1. That these Saline quintessences as they may be used, will draw forth the perfect and compleat essence of any vegetable whatsoever. 2. That the essence of Salts thus drawn will scarcely come to two ounces in a pound.

CHAP.



CHAP. XLVII.

Of Perfuming Unguents.

I. **T**O make Unguentum Pomatum, or Ointment of Apples.

Take Hogs Lard three pound, Sheeps Suet nine ounces, bruised Cloves one drachm, *Aqua Rosarum* two ounce, Romwaters pared and sliced one pound, boil all to the Consumption of the Rose water; then strain without pressing, to every pound of which add oil of *Rhodium* and Cinnamon of each thirty drops.

II. *To make a compound Pomatum.*

Take of the Pomatum aforesaid, (without the oils) four pound, Spikenard, Cloves of each two ounces, Cinnamon, Storax, Benjamin of each one ounce (the Spices and Gums bruised and tyed up in a thin rag) Rose water eight ounces; boil to the Consumption of the Rose water, then add white wax eight ounces, which mix well by melting, strain it again being hot; and when it is almost cold, mix therewith oil of Musk (made by the first Section of the five and fortieth Chapter) then put it out, and keep it for use.

III. *Another excellent Ointment.*

Take hogs griese one pound, *Saccharum Saturni* two ounces, mix them well by gently melting them; to which add oils of Musk and Ambergriese of each half an ounce, let them all cool, and beat the Unguent well in a mortar, and keep it for use.

IV. *To make Unguentum Moschatum.*

Take hogs griese one pound, Ambergriese, Mosch of each one drachm and a half, ground with oil of Jasemin upon a marble) *adepts Rosarum* half an ounce (ground with

with Civet one drachm ) mix all together into an ointment which keep for use

## CHAP. XLVIII.

### *Of Perfuming Powders.*

#### **I.** *To make Powder of Oxe dung.*

Take red Ox dung in the month of May and dry it well, make it into an impalpable Powder by grinding: it is an excellent Perfume without any other addition; yet if you add to one pound of the former, Musk, and Ambergriese of each one drachm it will be beyond comparison.

#### **II.** *To make Cyprian Powder.*

Gather Musk moss of the Oak in December, January or February, wash it very clean in Rose water, then dry it, steep it in Rose water for two days, then dry it again, which do oftentimes; then bring it into fine Powder and sieve it; of which take one pound, Musk one ounce, Ambergriese half an ounce, Civet two drachms, yellow Sanders in powder two ounces, mix all well together in a marble mortar.

#### **III.** *Another way to make the same.*

Take of the aforesaid powder of Oak moss one pound, Benjamin, Storax of each two ounces in fine Powder; Musk, Ambergriese and Civet of each three drachms, mix them well in a mortar.

#### **IV.** *A Sweet Powder to lay among cloaths.*

Take Damask-rose leaves dried one pound, Musk half a drachm, Violet leaves three ounces, mix them and put them in a bag.

#### **V.** *Another for the same or to wear about one.*

Take

Take Rose leaves dryed one pound, Cloves in powder half an ounce, Spicknard two drachms, Storax, Cinnamon of each three drachms, Musk half a drachm, mix them and put them into bags for use.

VI. *Powder of sweet Orrice, the first way.*

Take Florentine Orrice root in powder one pound, Benjamin, Cloves of each four ounces in powder, mix them.

VII. *Powder of Florentine Orrice, the Second Way.*

Take of Orrice root six ounces, Rose leaves in powder four ounces, Majoram, Cloves, Storax in powder of each one ounce, Benjamin, yellow Sanders of each half an ounce, Violets four ounces, Musk one drachm, Cyperus half a drachm, mix them: being grossly powdered, put them into bags to lay amongst linnen: but being fine they will serve for other uses, as we shall shew.

VIII. *Powder of Orrice roots, the third way, excellent for linnen, in bags.*

Take roots of Iris one pound, sweet Majoram twelve ounces, flowers of Rosemary and Roman Camomil, leaves of Time, *Geranium Moschatum*, Savory of each four ounces, Cyperus roots, Benjamin, yellow Sanders, *Lignum Rhodium*, Citron peel, *Storax*, *Labdanum*, Cloves, Cinnamon of each one ounce, Musk two drachms, Civet one drachm and a half, Ambergriese one drachm, powder and mix them for bags. This composition will retain its strength near twenty years.

IX. *Powder of Orrice, the fourth Way.*

Take Orrice roots in powder one pound, *Calamus Aromaticus*, Cloves, dryed Rose leaves, Coriander seed, *Geranium Moschatum* of each three ounces, *Lignum Aloe*, Majoram, Orange peels of each one ounce, Storax one ounce and a half, *Labdanum* half an ounce, Lavender,

vender Spicknard of each four ounces, powder all and mix them, to which add Musk, Ambergriese of each two scruples.

X. *Pulvis Calami Aromatici compositus.*

Take *Calamus Aromaticus*, yellow Sanders of each one ounce, Majoram, *Geranium Moschatum* of each one ounce, Rose leaves, Violets, of each two drachms, Nutmegs, Cloves of each one drachm, Musk half a drachm, make all into powder, which put in bags for Linnen.

XI. *Another of the same.*

Take *Calamus Aromaticus*, Florentine Iris roots of each two ounces, Violet flowers dried one ounce, round Cyperus roots two drachms, *adepts Rosarum* one drachm and a half, reduce all into a very fine powder: it is excellent to lay among Linnen, or to strew in the hair.

XII. *An excellent perfuming Powder for the hair.*

Take Iris roots in fine powder one ounce and a half, Benjamin, Storax, Cloves, Musk of each two drachms; being all in fine powder, mix them for a Perfume for hair Powder. Take of this Perfume one drachm, Rice flower impalpable one pound, mix them for a powder for the hair. Note, some use white starch, flower of French Beans and the like.

CHAP. XLIX.

*Of Perfuming Balsams,*

I. *Natural Balsam perfumed.*

Take *Balsamum verum* one ounce, Musk, Ambergriese, Civet of each two scruples, mix them, for a Perfume;



Perfume: it is the most fragrant and durable of all Perfumes.

II. *An odoriferous compound Balsam.*

Take of the aforesaid Balsam perfumed one ounce, oils of *Rhodium* and Cinnamon of each two drachms, mix them: this is an incomparable Perfume, and better than the other for such as are not affected so much with musk.

III. *Balsamum Moschatum.*

Take oil of Musk one drachm, oil of Cinnamon half a scruple; Virgin wax one drachm and a half; melt the wax, and mix them according to Art.

IV. *Another very good.*

Take Cloves, Cinnamon, Lavender, Nutmegs of each two drachms; oils of Cloves and *Rhodium* of each half a drachm, Wax three drachms, Musk and Ambergriese of each ten grains, mix them into a Balsam.

V. *Another very excellent for those that love not the scent of Musk and the like.*

Take oil of *Geranium Moschatum* (made as *adeps Rosarum* by the fourth Section of the five and fortieth Chapter) *adeps Rosarum*, oil of Cinnamon of each one drachm, Virgin wax six drachms, melt the wax, and mix the oils for a Perfume.

C H A P. L.

Of Perfuming Tablets.

I. *To make red Muskardines or Tablets.*

Dissolve gum *Tragacanth* in Rose water, so that it may be as thick as Gelly: wick make into paste with the following composition. Take *Amylum* one pound,

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fine

fine Sugar half a pound, *Cochenele* two ounces, Musk three drachms, all being in fine powder, mix them, and make tablets with the aforesaid Mucilage of *Tragacanth*, square, long, round, or of what form you please, which dry in an Oven, out of which bread hath been lately drawn: but be sure you dry them till they be as hard as horns.

II. *Another sort of Red Tablets.*

Take of the aforesaid composition one pound, Cloves, Cinnamon, Nutmegs, Ginger of each two ounces, *Cochenele* one ounce, all being in fine powder, make into tablets, with the aforesaid Mucilage, and dry as aforesaid.

III. *To make yellow Tablets.*

Take *Amylum* one pound, fine Sugar half a pound, yellow Sanders four ounces, Saffron two ounces, (or you may dip the *Amylum* in strong tincture of Saffron, and then dry it again) Musk four drachms, all being in fine powder, make the mass into tablets with the aforesaid Mucilage, adding oil of Cinnamon in drops two drachms, dry them carefully in the shade.

IV. *Another sort of yellow Tablets.*

Take *Amylum* dyed with tincture of Saffron I pound, Sugar half a pound, Saffron two ounces, Nutmegs, Cinnamon, Ginger of each one ounce, Carroways half an ounce, Musk three drachms, Ambergriele one drachm, all in fine powder make into tablets, as aforesaid, adding oil of Cinnamon two drachms; which dry in the shade, till they be as hard as Horns.

V. *To make Muscardines or Tablets of any other colour.*

You must make them after the same manner, only adding the colour you do intend; and in this case we think that it is better that the *Amylum* be dipt in the tincture; and dried first before you use it. Where note, that

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that these Tablets when used are to be held in the mouth, in which they will dissolve, there by cheering the heart, reviving the senses, comforting the spirits, strengthening nature, restoring the body, and indeed nobly perfuming the breath. For them that do not love Musk, you may make them without, using instead thereof so much the more oil of Roses or Cinnamon.

## CHAP. LI.

### Of making Pomanders for Bracelets.

I. *The first sort.* Take Orrice powder, Cloves, Mace, Cinnamon of each half an ounce, yellow Sanders, Styrax, sweet Assa of each two drachms, Ambergrise, Musk of each one drachm, Balsam of Peru, oil of Rhodium of each one scruple, Civet two drachms, all being in fine powder (except the Balsam and Oil) mix together, and make into paste with mucilage aforesaid, of which form Beads, drying them in the shade for use.

II. *The second sort.* Take Storax Labdanum one drachm and a half, Benjamin one drachm, Cloves, Mace, Spicknard, Geranium Moschatum of each ten grains, Musk, Ambergrise of each six grains; with mucilage make a Pomander for Bracelets.

III. *The third sort.* Take Damask Rose leaves exungulated two ounces, beat them impalpable: Musk, Ambergrise of each two scruples, Civet one scruple; Labdanum one drachm, with mucilage of gum Tragacanth, in Rose-water aforesaid, make a Pomander for Bracelets.

IV. *The fourth sort.* Take Storax, Benjamin of each

each an ounce and a half, Musk two drachms, oil of Cinnamon one drachm, with Mucilage aforesaid make a paste of *Pomander*, very excellent.

## CHAP. LII.

### Of Perfuming Wash-balls.

#### I. *To make Barbers Wash-balls.*

Take purified Venetian Soap six ounces, *Macaleb* four ounces, *Ireos*, *Amylum* of each seven ounces, Cloves two ounces, *Labdanum*, Anniseeds of each one ounce, Nutmegs, Majoram, Cypress powder, *Geranium Moschatum*, Camphire of each half an ounce, *Storax liquida* half a drachm, Musk ten grains, all being in fine powder, with a little fine Sugar, beat all in a mortar, and make them up into Wash-balls.

#### II. *To do the same another way.*

Take of the said Soap two pound, juice of *Macaleb* two ounces, Cloves, Orrice of each three ounces, *Labdanum* two ounces, *Storax* one ounce, all being in fine powder, mix with the Soap, of which make balls, drying them in the shadow.

#### III. *To make Balls of white Soap.*

Take of white Soap five pound, *Iris* four ounces, *Amylum*, white Sanders of each three ounces, *Storax* one ounce, all in powder, steep in Musk water, of which make paste for Wash-balls.

#### IV. *Another sort very good.*

Take of white Soap four pound, Orrice six ounces, *Macaleb* three ounces, Cloves two ounces, all in powder mix with the Soap, with a little oil of Spike, *Rhodium* or the like, of which make Balls.



V. *Another way to make them of Goats fat.*

Make a strong *Lixivium* of Pot-ashes, as that a new laid egg will swim thereupon, which boil with Citron peels: take of this Lye twenty pound, Goats fat two pound, boil it for an hour, then strain it through a linnen cloth into broad platters of fair water, exposing it to the Sun, mix it often every day, till it begins to grow hard, of which you may form balls, which you may perfume with Musk half a drachm, Civet one scruple, oil of Cinnamon ten grains.

VI. *To purifie Venetian Soap.*

Cut it small, to which put some Rose water, or other perfuming water, boil them a while, then strain it and it will be sweet and good, then take off the Soap which swims a top with a spoon, and lay it upon a tyle, and it will presently be dry, being white, free from filth and unctuosity.

VII. *Another way to do the same.*

Grate the Soap, and dry it in the Sun, or an Oven, powder and sieve it, then moisten it with some sweet water or oil of Spike, which dry again (in the shadow) and keep it for use.

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C H A P. LIII.

*Of Perfuming Soaps.*

**I**T *O make white musked Soap.*

Take white Soap purified as aforesaid three pound, Milk of *Macaleb* one ounce, Musk, Civet of each ten grains, mix them and make all into thick Cakes or rouls.

II. *Another kind of Sweet Soap.*

Y 3

Take

Take of the oldest Venice Soap, which scrape and dry three days in the Sun (purifying it as aforesaid) two pound, *Ireos*, *Amylum* of each six ounces, *Storax liquida* two ounces, mix them well whilest hot; which put into pans to form Cakes.

III. *To make soft Soap of Naples.*

Take of *Lixivium* of Pot-ashes (so strong as to bear an egg) sixteen pound, Deers Suet two pound, set them upon the fire to simmer; put all into a glased vessel with a large bottom, set it in the Sun for a while, stirring it five or six times a day with a stick, till it wax hard like paste. Then take of this paste, to which put Musked Rose water; keep it eight days in the Sun, stirring it as aforesaid, so long as it may be neither too hard nor too soft; then put it up in boxes or pots.

IV. *To make the same Soap musked.*

Put to the said Soap, Rose water two pound, fine musk in powder half a drachm, then mix the said water as before.

V. *Another exquisite Soap.*

Take of the aforesaid *Lixivium* or oil of Tartar *per deliquium* twelve pound, oil Olive three pound, mix them, *Amylum* two pound, Roman Vitriol one ounce in powder, Glair of eggs two ounces, put all together, and stir continually for four hours time, then let it stand the space of a day and it is done. You may perfume it as before; this makes the hair fair.

VI. *Another exceeding the former.*

Take Crown-soap, Vine-ashes of each one pound, make it into Cakes with powder of Roch Alom and Tartar of each alike, which you may perfume at pleasure.

VII. *To get the juice or milk of Macaleb.*

Take the sweet and odoriferous grains of *Macaleb*, which beat in a mortar (with Rose water, or some perfuming

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perfuming water) till it becomes like pap, then press out the juice or milk; which use within two or three days lest it spoil.

## C H A P. LIV.

*Of Burning Perfumes,***I. To make perfumed lights.**

Take *Olibanum* two ounces, Camphire one ounce, beat them into powder, of which make, with wax, balls or roulds, which put into a glass lamp with Rose water and lighted with a candle, will give a fair light, and a very good scent.

**II. Another for a Lamp.**

Take sweet oil Olive one pound, Benjamin, Storax in powder one ounce, Musk, Ambergriese of each one scruple, mix all with the oil, which put into a lamp to burn: and the oil will yield a fragrant odour.

**III. To make perfumed Candles.**

Take *Labdanum*, Myrrh, *Xyloaloes*, *Styrax calamita* of each one ounce and a half, Willow Charcoal one ounce, Ambergriese, Musk of each ten grains, make them into paste with mucilage of Gum *Tragacamb* in Rose water, which make into roulds like Candles, and dry for use.

**IV. A perfume to smoak and burn.**

Take *Labdanum* two ounces, Storax one ounce, Benjamin, Cloves, Mace of each half an ounce, Musk, Civet of each ten grains, all in fine powder, make up into cakes with mucilage of gum *Tragacanth* in Rose water, which dry, and keep among your cloaths; which when occasion requires you may burn in a chafing-dish of coals.

V. *Another smoaking perfume to burn.*

Take *Labdanum* two drachms, *Storax* one drachm, *Benjamin*, *Frankincense*, white *Amber*, *Xylo-aloes* of each two scruples, *Ambergriese*, *Musk* of each five grains, make all into Cakes as aforesaid.

VI. *Another very excellent.*

Take *Storax*, *Benjamin* of each one ounce, wood of *Aloes* half an ounce, *Ambergriese*, *Musk*, *Civet*, *Balsam of Peru*, oil of *Rhodium* of each two scruples, *Ivory* burnt black a sufficient quantity, powder what is to be powdered, and mix all together; which make into a paste, with the *Ivory* black and the mucilage aforesaid; make little cakes and dry them, which keep in glasses close stoppt for use.

VII. *Another very good, but of less cost.*

Take *Olibanum* one pound, *Storax Calamita* and *Liquida* of each eight ounces, *Labdanum* six ounces, *Willow* charcoal a sufficient quantity, with mucilage of *Tragacanth*, make a paste as aforesaid.

## C H A P. L V.

*Of Animal and Mineral Perfumes.*I. *The Animal Perfume of Paracelsus.*

Take Cow-dung in the month of *May* or *June*, and distil it in *Balneo*; and the water thereof will be an excellent perfume, and have the scent of *Ambergriese*. See our *Synopsis Medicinæ* lib. 3. cap. 75. Sect. 5.

II. *Lard muskified, a great perfume.*

Take hogslard very pure one drachm, *Musk*, *Civet*, of each half a drachm, mix them well for boxes.

III. *The Mineral Perfume of Antimony.*

Dissolve



Dissolve Antimony in oil of Flints, Crystal or Sand, coagulate the solution into a red mass, put thereon Spirit of Wine, and digest till the Spirit is tinged; pour it off, and put on more, till all the tincture is extracted; put all the tinctures together, and evaporate the Spirit of Urine in *Balneo*; and there will remain a blood-red liquor at bottom; upon which put Spirit of Wine, and you shall extract a very pure tincture, smelling like Garlic: digest it a month, and it will smell like Balm; digest it a while longer, and it will smell like Musk or Ambergriese.

Besides being a perfume, it is an excellent sudorifick, and cures the Plague, Feavers, *Lues Venerea*, &c.

IV. After the same manner you may make as substantial a perfume of Sulphur or Brimstone. The making of the oil of Flints we have taught at the seven and fiftieth Section of the nine and twentieth Chapter of the third Book.

## CHAP. LVI.

### Of the Adulteration of Musk, Civet and Ambergriese.

**B**Y reason that these choice Perfumes are often adulterated or counterfeited, we shall do our endeavour to discover the cheat, lest any being deceived thereby should suffer loss.

I. Musk is often adulterated by mixing Nutmegs, Mace, Cinnamon, Cloves, Spicknard of each alike in a fine or impalpable powder with warm blood of Pidgeons, and then dryed in the Sun, then beaten again, and moistened with Musk water drying and repeating the same work eight or ten times; adding at last a quarter part of pure Musk by moistening and

and mixing with Musk water; then dividing the mass into several parts, and rousing them in the hair of a goat, which grows under his tail.

II. *Others adulterate it thus*: By filling the Musk cuds with Goats blood, and a little roasted bread, mixed with a quarter part of Musk, well beaten together. The cheat is discerned by the brightness of the Goats blood.

III. *Or thus*, Take Storax, Labdanum, powder of Xylo-aloes, of each four ounces, Musk and Civet of each half an ounce, mix all together with Rose water. The cheat is discerned, by its easie dissolving in water, and its different colour and scent.

IV. *Or thus*, Take Goats blood, powder of Angelica roots, Musk of each alike, make a mixture.

V. *To adulterate Civet*: Mix with it the Gall of an Oxe, and Storax liquefied and washed: or you may adulterate it by the addition of Honey of Crete.

VI. *To restore the lost scent to Musk, or Ambergrise*. This is done, by hanging it some time in a Jakes or house of Office; for by these ill scents, its innate vertue and odour is excited and revived.

## CHAP. LVII.

*Of the way of Perfuming Cloth, Skins, Gloves and the like.*

**I. T**O Perfume Skins or Gloves.

Put a little Civet thereon here and there, (if Gloves, along the seams) then wash in Rose or musked water four or five times, or so long as that they savour no more of the leather, pressing them hard every time; then

then lay them in a platter, covered with the said water, mixed with powder of Cypress, a day or two; take them out, press them, and dry them in the shadow: being half dry, besmear them a little with Civet mix'd with oil of Jasemin or Ben, on the inward side, chafing them with your hands before a fire, till you think that the Civet hath pierced or gone through the leather; leaving them so a day or more; then rub with a Cloth that the Gloves or Leather may grow soft; leaving them so till they are almost dry, being drawn and stretched out; then hold them over some burning Perfume to dry, and wetting them again with Musk water, do thus twenty times; lastly, take Musk and Ambergrise a sufficient quantity, which mix with oil of Jasemin, Benjamin or Ben, dissolve at the fire with a little perfumed water, with which (with a pencil) strike the Gloves, or Leather over on the outside, besmearing the seams with Civet; lastly lay them for six or eight days; between two mattresses, so will the Skins or Gloves be excellently pertumed.

*II. Another way very excellent.*

Take three pints of Wine, Sheeps suet or fat one pound, boil them together in a vessel close covered; this done, wash the Griese six or seven times well with fair water, then boil it again in White-wine and Rose water of each one pound and a half, with a small fire, till the half be consumed: then take the said griese, to which put pulp of sweet Navews roasted half a pound, boil all in Rose water half an hour, then strain it, and beat it in a mortar, with a little oil of Jasemin and Musk, with which besmear your Gloves (after due washing as aforesaid) rubbing it well in by the fire.

*III. Another way for Gloves.*

Wash new Corduban Gloves, wash them well three or four days (once a day) in good White-wine, pressing

sing and smoothing them well; lastly, wash them in musked water, letting them lye therein for a day, then dry them with care. This done, steep *Musk*, *Amber*, *Bazil* of each one drachm in a quart of sweet water, in which dissolve gum *Tragacanth* three drachms, boil all gently together, and in the boiling add *Zibet* one scruple, with which besmear the Gloves, rubbing and chafing it in, then drying them according to Art.

IV. *Or thus*, First wash the Gloves or Skins in white-wine, then dry them in the shade; then wash them in sweet water, mixed with oil of Cloves, and *Labdanum* of each alike: lastly, take *Musk*, *Civet*, *Ambergriese* of each the quantity of six grains, oil of *Musk* half a drachm, mucilage of gum *Tragacanth* fifteen grains, mix them well together in a mortar, which chafe into the wash'd Gloves before the fire.

V. *Cloths*, *Linnen* or *Woolen*, *Coffers*, *Trunks* and the like, are best perfumed (with little cost) with the smoak of burning Perfumes.

## CHAP. LVIII.

### *Of making various sorts of Ink.*

#### I. *To make good black writing Ink.*

Take ponderous galls three ounces in powder, White-wine, or in place thereof rain water, which is better, three pound, infuse them in the Sun or in a gentle heat two days: then take Roman Vitriol well coloured and powdred, which put therein, and set all in the Sun for two days more; shake all together, to which add of good gum Arabick in little bits one ounce, with a litte white Sugar, which dissolve over a gentle fire.

II. To



*II. To make red writing Ink.*

Take Rasps of Brazil one ounce, white lead, Alom of each two drachms, grind and mingle them, infuse them in Urine one pound, with gum Arabick eight scruples.

*III. Another way to make red Ink.*

Take Wine-vinegar two pound, Rasps of Brazil two ounces, Alom half an ounce, infuse all ten days; then gently boil, to which add gum Arabick five drachms, dissolve the Gum, strain, and keep it for use.

*IV. To make green Ink to write with.*

Make fine Verdigrise into paste with strong Vinegar, and infusion of green galls, in which a little gum Arabick hath been dissolved; let it dry, and when you would write with it, temper it with infusion of green Galls aforesaid.

*V. Another way to make green Ink to write with.*

Dissolve Verdigrise in Vinegar, then strain it, and grind it with a little honey and mucilage of gum Tragacanth, upon a porphyry stone.

*VI. To make blew Ink to write with.*

Grind Indico with honey mixed with glair of eggs or glew water, made of Isinglass dissolved in water, and strained.

*VII. To make red writing Ink of Vermilion.*

Grind Vermilion well upon a porphyry stone, with common water; dry it and put it into a glass vessel, to which put Urine, shake all together, let it settle, then pour off the Urine; and putting on more Urine, repeat this work eight or ten times, so will the Vermilion be well cleansed; to which put glair of Eggs, to swim on it above a fingers breadth, stir them together, and settling abstract the glair: then put on more glair of eggs, repeating the same work eight or ten times also,

to take away the scent of the Urine: lastly, mix it with fresh glair, and keep it in a glass vessel close stop'd for use. When you use it, mix it with water or vinegar.

VIII. *To make Printers black.*

This is made by mingling Lamp black with liquid Varnish, and boiling it a little, which you may make thick at pleasure. You must make it moister in winter, than in Summer; and note that the thicker Ink makes the fairer letter.

If it be too thick, you must put in more Linseed oil, or oil of Walnuts, so may you make it thicker or thinner at pleasure.

IX. *To make red Printing Ink.*

Grind Vermilion very well with the aforesaid liquid Varnish or Linseed oil.

X. *To make green Printing Ink.*

Grind Spanish green with the said Varnish or Linseed oil as aforesaid: And after the same manner, may you make Printers blew, by grinding Azure with the said Linseed oil.

C H A P. LIX.

*Of making Sealing Wax.*

I. *To make red Sealing Wax.*

Take white Bees wax one pound, Turpentine three ounces, Vermilion in powder well ground, oil Olive of each one ounce, melt the wax and Turpentine; let it cool a little, then add the rest, beating them well together.

II. *To do the same otherwise.*

This is done by taking away the Vermilion, and adding instead thereof red Lead three ounces, to the former things.

III. *To*

III. To make green Wax.

Take Wax one pound, Turpentine three ounces, Verdigrise ground, Oil Olive of each one ounce, complete the work by the first Section.

IV. To make black Wax.

Take Bees Wax one pound, Turpentine three ounces, black earth, Oil Olive of each one ounce, mix and make Wax as aforesaid.

V. To make Wax perfumed.

This is done by mixing with the Oil Olive aforesaid, Musk, Ambergrise, or any other eminent Perfume, as oil of Cinnamon, *adeps Rosarum*, or the like one drachm, more or less, according as you intend to have its scent extended.

VI. After the same manner you may make Sealing wax of all colours, having what scent you please; by mixing the scent intended, with the Oil Olive, and putting the colour in, in place of the Vermilion.

C H A P. LX.

Of the various ways of making Artificial Pearls.

I. **T**he first Way. Dissolve mother of Pearl in spirit of Vinegar, then precipitate it with oil of Sulphur *per Campanum* ( not with *Oleum Tartari*, for that takes away the splendor ) which adds a lustre to it; dry the precipitate, and mix it with whites of eggs; of which mass you may make Pearls, of what largeness you please, which before they be dry, bore through with a silver Wire, so will you have pearls scarcely to be discerned from those which are truly natural.

II. *The second way.* Take Chalk, put it into the fire,

fire, letting it lye till it breaks; grind it impalpable, and mix it with whites of eggs, of which form pearls, boring them as aforesaid; dry them, then wet and cover them with leaf silver.

III. *The third way.* Take prepared Crabs eyes, ground into impalpable powder, and with glair make Pearls; which bore, as aforesaid; dry them, and boil them in Cows milk; then in the shade (free from dust) dry them well; they will please.

IV. *The fourth Way.* Take potters earth, and make them of what form you please; dry them in the Sun, or in the gentle heat of a furnace; then wet them with glair of eggs, lightly coloured with Bole armoniack, and cover them with leaves of silver, being first wet with water: when they are dry, polish them with a tooth, and they will be Oriental. Then take bits of Parchment, and wash them in warm water, till the water grows somewhat thick, boil and strain it, and use it warm: then fasten each pearl through its hole upon a fine piece of wire, and plunge them into the water of Parchment, taking them out again; then turn them round, that the glewy liquor may equally cover them: thus the silver whiteness will the better shine through, so that the pearls will seem to be truly natural, and being compared, will rather exceed.

V. *The fifth Way.* Calcine Muscle and snail shells in a Crucible, till they are very white, even as snow; with glair make Pearls, which bore by the first Section, dry them in the Sun; dip them in red wine, dry them again, and they will be fair.

VI. *The sixth Way.* Take *Sublimate* two ounces, *Tinglass* one ounce, mix them, and sublime them together, and you will have a sublimate not inferiour to the best orient Pearls in the world, of which with glair, you may form what you please.

VII. *The*



VII. *The seventh Way.* Take any of the aforesaid particulars, and mix them (instead of glair) with ground Varnish, (made of gum Animæ, and the Alcohol of wine) of which make pearls; these will in all respects be like the natural; for these will no more dissolve in water, than the truly natural; which all those that are made of glair of eggs are unavoidably subject to.

VIII. *The eighth Way.* After dissolution, precipitation, edulcoration, siccation and formation; put the pearls into a loaf of bread, and bake it in the Oven with other bread, so long till the loaf is much burnt, then take them out, and wash them, first in good juice of Limons, then in clear Spring water; and they will be as fair as the truly natural. Or after baking, give them to pidgeons to eat, keeping them close up, and in the dung you will find the pearl exceeding fair: where note; you must give the pidgeons nothing to eat in three days time.

IX. *The ninth Way.* After dissolution of small oriental pearls in juice of Limons, make the form thereof with clarified honey, moistning your hand with *Aqua Mellis*; this done, perfect them as before.

X. *The tenth Way.* Take filtrated juice of Limons, powder of pearl of each six ounces, *Talk* one ounce, put them into a glass, and stop it close, set it fifteen days in horse-dung, and it will be a white paste; of which form pearl, bore them, and dry them in the Sun; at last in paste of barley meal (*viz.* a barley loaf) four fingers thick, stick the pearl, so that they may not touch, stop the holes, and cover them with paste; set it into an Oven, and bake it with bread, and you will find them hard and clear.

XI. *The eleventh Way.* Having formed them of the matter intended; bored and dried them, put them in-

to Quicksilver, set over a glowing heat, stirring them well about, that the Quicksilver may stick to them; then dip them into glair of eggs, upon a glowing heat, and they are done: or being dry, boil them in Linseed oil, and wash them in warm water.

XII. *The twelfth Way.* Take pearl three ounces, prepared Salt one ounce, filtrated juice of Limons, so much as will cover them four fingers breadth: let it stand so long till it be a paste; the glass being very close stopped, shake all together five or six times a day; and when it comes to a paste put it into a glass with strong spirit of Vinegar, lute another glass over it; digest it three weeks in a cool place under the earth, so long till all be dissolved, then mix it with a little oil of eggs, or snail water, till it be like pearl in colour; then put this paste into silver moulds, and close them up for eight days; after which take them out, and bore them by the first Section, and put them again into the mould for eight days; this done, boil them in a silver porringer with milk; lastly, dry them upon a plate, in a warm place, where neither wind nor dust may come, and they will be much fairer than any oriental pearl.

XIII. *The thirteenth Way.* After the preparation of the matter in juice of Limons, or *Aqua fortis*, with clean hands make them into paste, and wash them in distilled water, which put into edulcorate calx of silver, and digest in Horse-dung for a month, so will they be fair and very oriental.

XIV. *The fourteenth Way.* Dissolve the matter in *Aqua fortis* (which let over-top it a fingers breadth) in a glass gourd, till all be incorporated into one body, which put into silver moulds, which have holes through them, and having stood one day, bore them through the holes, as they lie in the mould with a silver needle: being quite dry, take them out, put them into

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into a glass close covered in the Sun, till they be quite dry; then put them upon a silver wire; and let them lie covered in their own fat (that is, that fatty substance which swims on the top of the menstruum in their dissolution) so long till they are very fair, then being strung, put them into a glass egg, and let them stand nine days in digestion, and they will be as fair as the natural.

XV. *The fifteenth Way.* Take Tobacco-pipe clay, of which form little beads (by the fourteenth Section) dry them in the Sun, and burn them in a potters furnace; then cover them with Bole armoniack, tempered with whites of eggs; being dry, dip them in water, lay on leaf silver, which dry again, and polish them with a tooth: then take clean shavings of parchment, cut small, and washed well with warm water; boil them in a new pot, with a slow fire, till they become somewhat thick, strain it, and being warm put in the pearl upon a needle or fine wire, that the hole may not be stopped, take them out, turn them round, that the water or glew may not settle in one place, dipping them so often (drying them every time) till they be thick enough, and they will appear full as fair as the truly natural.

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C H A P. LXI.

*Of the Consummation or Perfection of the Art of Painting.*

**I.** *AS* Invention gave way to the advancement of Art; so the advancement of the same made way for its Perfection.

The invention arose from the appearance of things natural, conceived in *Ideas*, as we have abundantly

signified ( *in the first Chapter of this Book* ) the Advance from the bringing of those *Idea's* to light through practice ( *by Chap. 35.* ) from when arose things very excellent for greatness; very good for their usefulness; choice for their novelty, and singular for their kind.

II. *Ease of Invention, Plenty of Matter, and Neatness of Work, were steps by which Art was consummated.* For ease of Invention gave Encouragement, Plenty of Matter gave Formation, and Neatness gave Delight, all which so conspired together, to put so much of emulation into the Artificer, to undertake, or endeavour to do those things, which in their kind might never after be exceeded: this indeed was their aim of old, which although the antients of this Art could never attain unto, yet did they make such way, that some of their followers have done those things, which never any after them could ever mend, nor themselves scarcely come near. *Easie* invention springs out of a great and well rooted fulness of learning; by being conversant in all sorts of studies, having Familiarity with Antiquities; the knowledge of innumerable historical and poetical narrations, together with a through acquaintance with all such motions and *Idea's* of the mind, as are naturally incident unto men: for the whole force of this Art doth principally consist in these things, nothing bearing a greater sway in the manifold varieties of *Painting*.

III. *It was the opinion of Pamphilus (the master of Appelles) that without the knowledge of Arithmetick, Geometry and the Opticks, this Art could not be brought to Perfection.*

The examples of *Phidias* and *Alcarnenes* is pertinently brought here; The *Athenians* intending to set up the Image of *Minerva* upon a high pillar, employed those two workmen, purposing to chuse the better of the two; *Alcarnenes* ( having no skill in *Geometry* nor the *Opticks* )



*Opticks*) made her wonderful fair to the eye of them that saw her near. *Phidias* contrariwise (being skilful in all Arts, chiefly the *Opticks*) considering that the whole shape would change according to the height of the place, made her lips wide open, her nose somewhat out of order, and all the rest accordingly, by a kind of resupination: the two Images being brought to view, *Phidias* was in great danger to have been stoned by the multitude, until at length the Statues were set up; where the sweet and excellent strokes of *Alcámenes* were drowned; and the disfigured, distorted hard-favouredness of *Phidias* his work vanished (and all this by the height of the place;) by which means *Alcámenes* was laughed at, and *Phidias* much more esteemed. Of like perfection is *Amulius* his *Minerva*; the Image of *Juno* in the temple of the Syrian goddess; the head of *Diana* exalted at *Cbios*, made by *Bupalus* and *Antibermus*; *Hercules* in the temple of *Antonia*, &c. An Artificer, saith *Philostratus* in *Proæmio Iconum*, must understand the nature of a man thoroughly, to express all his manners, guise, behaviour, &c. he must discern the force in the constitution of his cheeks, in the turning of his eyes, in the casting of his eyebrows; in short, he must observe all things which may help the judgment; and whosoever is thus furnished will doubtless excel, and bring things to perfection; he then may easily paint a mad man, an angry man, a pensive man, a joytul man, an earnest man, a lover, &c. in a word, the perfection of whatsoever may possibly be conceived in the mind.

IV. *Continual observation of exquisite pieces (whether Artificial or Natural) nimble conceptions, and tranquillity of mind, are great means to bring Art to Perfection.*

The works of the Antients could never have been so exquisite in the expression of Passions, but by these means. How perfectly did *Zeuxis* paint the modest and chaste

behaviour of *Penelope*; *Timomachus* the raging mad fit of *Ajax*; *Silvanus* the frowardness of *Apollodorus*; *Protagoras* the deep pensiveness of *Phidias*; *Praxiteles* the rejoycings of *Phryne*; *Parrhasius* a boy running in Armour; and *Aristides* his *Anapanomenos* dying for love of his brother. *Bodius* his Image of *Hercules* is of the same nature; *Themistius* shews us the true Image of feign'd friendship; *Agellius* a most lively Image of *Justice*; *Apelles* an admirable picture of *Slander*; thousands of examples more might be drawn out of ancient Authors to approve these things, if these may be thought not sufficient.

V. *This Perfection also lyeth in the truth of the matter, the occasion thereof, and discretion to use it.*

The most ancient and famous Painters did make much account of *Truth*, and had rather lose the neatness and glory of their pieces, than to endanger the truth of their story; which indeed is the great commendation of a Picture, for as much as *Lucian* saith, that nothing can be profitable but what proceeds from truth. *Occasion* also is a great matter; the Picture of *Bacchus* may here serve for an excellent example, whose passion of love was so clearly expressed therein; casting aside his brave apparel, Flowers, Leaves, Grapes, &c. Now in representing things truly according to the occasion, *discretion* ought to be your guide; for as in Tragedies, so also in Pictures all things ought not to be represented; let not *Medea* (saith *Horace in libro de Arte*) murder her own children in the presence of all the people; let not the wicked *Atræus* boil humane flesh openly; there are doubtless many things, which had better be left out, though with some loss of the story, than with the loss of modesty; wanton, unlawful and filthy lusts (though they may gain the vain title of wit, yet) they diminish not only the estimation of the workman, but also

also the excellency of the work, debarring it of perfection. Precepts help Art much, in propounding unto us the right way; but where they fail, our wits must supply, by warily considering what is decent and convenient; for this Art requireth studious endeavours, assiduous exercitations, great experience, deep wisdom, ready counsel, veracity of mind, diligent observations, and great discretion.

VI. To the former add Magnificence, which gives authority to things excellent.

Great minded men are most of all given to entertain stately conceits; therefore an Artizan ought to be of a *magnanimous* nature; if not, yet that at least he ought with a determined resolution to aim at *magnificent* things. So it seems that nature did dispose *Nicophanes* to a high strain of invention; *Nicophanes* (saith *Pliny*, *lib. 35. cap. 10.*) was gallant and neat, so that he did paint *Antiquities* for *Eternity*, whereby he was commended for the magnificence of his work, and gravity of his Art. Such *Artificers* therefore as do bring any thing to perfection, must be of an exceeding great spirit, and entertain upon every occasion great thoughts, and lofty imaginations; by this means they shall gain an everlasting fame; but this is impossible (saith *Longinus*) for any who busie the thoughts and studies of their life about vile and slavish matters, to bring forth any thing which might deserve the admiration of succeeding ages. If any Artizan be not naturally of so great a spirit, let him help himself by the reading of *History* and *Poesie*; *History* cannot but inspire a *magnanimous Spirit*, when she represents to us so many rare exploits, and the examples of so many great, noble and valiant souls, who throughout all ages, in the midst of most eminent dangers, have demonstrated their vertues and spirits not only to those present, but all succeeding times. *Poesie* also being of a

haughty and lofty stile, doth much enlarge the mind, and from thence many excellent things are brought: The much admired *Elean Jupiter* which *Phidias* made, himself confessed to be formed after the Image of *Jupiter* described in *Homer*. From the same Poet did *Apelles* paint the Image of *Diana* among the sacrificing Virgins. It is not the present age, but the sacred memory of all posterity, which gives unto us a weighty and durable crown of Glory.

VII. *Exact Analogy* or proportion, not only advanced Art, but also brought it a degree nearer Perfection.

*Philostratus* calls it *Symmetrie*, some *Analogy*, others *Harmony*; this is the appellation of the *Greeks*; what the *Latins* called it scarcely appears (as *Pliny* saith lib. 34. cap. 8.) yet words equivalent in power thereto are found, as *Congruence*, *equality*, and *Tully* (*libro primo de Officiis*) calls it *Agreement* and apt composition; *Vitruvius*, *Commodulation*; *Agellius* calls it a *natural competence*; *Quintilian* approves the word *Proportion*; by which saith *Plutarch* beautiful things are perfected: it is one of those things which the most High used in the fabrication of the world (*Wisd. 11. 20.*) He hath disposed all things in measure and number and weight. The first giver of *Symmetrie* or *Analogy* was *Parrhasius Polycletus*, who was a diligent observer thereof; *Asclepiodorus*, an exact practiser thereof, whose admirer was *Apelles*, who esteemed it to proceed out of some perfections in an Artificer surpassing in Art, and which is most apparent in naked and undisguised bodies. *Strabo* saith, that *Phidias* exactly observed this proportion in the Image of *Jupiter Olympicus* sitting. The same *Phidias*, as *Lucian* reports, could exactly tell upon the first sight of a Lions claw, how big a Lion he was to make in proportion to the same claw. Lineal Picture is the foundation of all imitation; which if it be done after the true rules of



of proportion, will lively represent the thing delineated: this is a perfection in kind, which yet cannot be compared to the perfection of a coloured Picture.

VIII. *This point of Perfection was further advanced by the exquisiteness of Colouring.*

The perfection of Colouring ariseth from a certain right understanding of each colour severally, without which it is impossible to mix any thing rightly, as *Hermogenes* saith. The Greeks (as *Porphyrus*) call this mixtion of colours, *corruption*, which word *Plutarch* also used when he said that *Apollodorus* (who first found out the corruption or way of shadowing in colours) was an *Athenian*. *Lucian* calls it *confusion*, where he saith that by the Art of Painting, Images were made by a moderate confusion of Colours, as white, black, yellow, red, &c. by which, as *Philostratus* saith in *Proemio Iconum*, we know how to imitate the diversities of looks in a mad man, in a sad or chearful countenance; the colour of the eye, as brown, gray or black; of the hair, as golden, ruddy, bright, or flaxen; of the cloaths, as cloth, leather, or armour; of places, as chambers, houses, forrests, mountains, rivers, fountains, &c. this is done by the accurate mixtion, due application, and convenient shadowing, as *Lucian* saith in *Zeuxide*; through the observation of light, shadow, obscurity and brightness, as *Plutarch* will have it. For this cause, saith *Johannes Grammaticus*, is a white or golden Picture made upon a black ground. Light is altogether necessary, seeing there can be no shade without it: light and shadow cannot sublist asunder, because by the one, the other is apparent; for those things which are enlightned seem to stick out more, and to meet the eyes of the beholder; those which are shaded to be depressed. This same of light and shadow, *Nicias* the *Athenian* did most accurately observe; as also *Zeuxis*, *Polygnotus*, and *Euphranor*,

*phrator*, as *Philostratus* saith in *libro secundo de vita Apollonii*, cap. 9. *Apelles* painted *Alexander* as if he held lightning in his hand; *Philostratus* observed the same in the picture of an Ivory *Venus*, so that one would think it an easie matter to take hold of her; *Pausias* arrived to such an excellency in this, as scarcely any after could attain unto, as in the painted Oxe, saith *Pliny*, which he made inimitable. *Obscurity* or *Darkness* is only the duskiness of a deeper shadow, as *brightness* is the exaltation of light: if white and black be put upon the same superficies, the white will seem nearest, the black farther off: this being known, to make a thing seem hollow, as a ditch, cave, cistern, well, &c. it is coloured with black or brown; and so much the blacker, so much the deeper it seems; extreme black representing a bottomless depth; but to make it rise, as the breasts of a maid, a stretched out hand, &c. there is laid round or on each side so much black or brown, as may make the parts seem to stick out by reason of the adjacent hollowness; *brightness* is sometimes used for necessity, but generally for ornament, ( as in the pictures of *Angels*, *Gems*, *Armour*, *Flame*, *Flowers*, *Gold*, and the like ) the which is made alwayes with a mixture of light; which mixtion Painters call *Harmoge*, but is nothing else save an undiscernible piece of Art, by which the *Artizan* stealingly passeth from one colour into another, with an insensible distinction; this *Harmoge* is most perfect in the *Rainbow*, which containing evident variety of Colours, yet leaves them so indistinguishable, as that we can neither see where they begin, nor yet where they end, as *Boëtius* observes in *libri quinti de arte musica capite quarto*. The last and chief perfection of colouring lieth in the out-lines, or extremities of the work, being cut off with such a wonderful subtilty and sweetness, as to present unto us things we do not see, but that we should believe

believe that behind the pictures, there is something more to be seen, than can easily be discerned; thereby setting forth, as it were, those things which are really concealed; this was *Parrhasius* his chief glory; but herein *Apelles* exceeded all others whatsoever, as *Petronius in Satyricon* seems to affirm.

IX. *Action and Passion is next to be considered, in which consists life and motion.*

There is not any thing that can add a more lively grace to the work, than the extreme likeness of motion, proceeding from the inward Action or Passion of the mind. It is therefore a great point of Art, which leads unto *Perfection*, the which we are to learn by casting our eyes upon nature, and tracing her steps. Consider all the gestures of the body, as the head, by which is expressed the affections of the mind. The casting down of the head, sheweth dejection of mind; being cast back, arrogance hanging on either side, languishing; being stiff or sturdy, churlishness; by it we grant, refuse, affirm, threaten; or passively are bashful, doubtful, sullen, envious, &c. by the motions of the Countenance appears sorrow, joy, love, hatred, courtesie, courage, dejection, &c. by the motions of the countenance, are expressed the qualities of the mind, as modesty and shamefastness, or boldness and impudence; but of all the parts of the countenance, the eyes are most powerful, for they, whether we move or move not, shew forth our joy or sorrow; this is excellently expressed by the Prophet, in *Lam.* 3. 48. עיני על שבר בתי עמי. *palge majim terad gneni, gual sheber bat gnammi*; which Tremellius renders, *Rivis aquarum perfudit oculus meus, propter contritionem filie populi mei*: and again תורה ולא תדמה עיני נגרה ורא תדמה, i. e. *oculus meus defluit nec desistit*. For the same purpose it is that nature hath furnished

nished them with tears; but their motion doth more especially express the intention, as meekness, pride, spitefulness, and the like; all which are to be imitated, according as the nature of the action shall require, as staring, closed, dull, wanton, glancing, asking or promising something. The *eyebrows* also have some actions, for they chiefly command the fore-head by contracting, dilating, raising and depressing it; wrinkled brows shew sadness and anger; displayed, cheerfulness; hanging, shame, elation, consent; depression, dissent, &c. The *Lips* shew mocking, scorning, loathing, &c. The *Arm* gently cast forth, is graceful in familiar speech; but the arm spread forth towards one side, shews one speaking of some notable matter; without the motion of the *hands* all motion is maimed: The hands as it were *call, dismiss, threaten, request, abhor, fear, ask, demand, promise, deny, doubt, confess, repent, number, measure, rejoice, encourage, beseech, bind, reprove, admire, relate, commend, &c.* In admiration we hold the hand up, bent somewhat backward, with all the fingers closed: In relating we join the top of the forefinger to the thumb-nail: In promising we move it softly: In exhorting or commending, more quick: In penitence and anger, we lay our closed hand to the breast: We close the fingers ends, and lay them to our mouth when we consider, &c. It is not yet enough that the Picture or Image resembles the proportion and colour of the life, unless it likewise resembles it in the demeanour of the whole body; therefore *Callistratus* calls this Art, the art of counterfeiting manners. *Ulysses* is evidently, saith *Philostatus*, discerned by his austerity and vigilancy; *Menelaus* by his gentle mildness; *Agamemnon* by a kind of Divine Majesty; *Ajax Telamonius*, by his grim look; *Locrus* by his readiness and forwardness. The best Artists ever change  
their



their hands, in expressing of Gods, Kings, Priests, Senators, Orators, Musicians, Lawyers, &c. Zeuxis painted the modesty of Penelope: Ecbion made a new married but shamefaced woman: Aristides painted a running Chariot drawn with four horses: Antiphius made a boy blowing the fire: Philoxenus Eretrius depicted the Picture of Wantonness: Parrhasius made the *Hoplides* or Pictures of two armed men, as may be seen in *Pliny lib. 35. cap. 9, 10, and 11*. Boëthius made a babe strangling a goose: Praxiteles made a weeping woman, and a rejoicing whore: Euphranor drew the picture of Paris as a Judge, a wooer and a soldier: See *Pliny lib. 34. cap. 8.* where you may have many other examples. It is worth our pains to see in *Callistratus* these descriptions at large, whereby we may see it is a singular Perfection of Art.

X. *The last step of Perfection is the right ordering and disposing of things.*

This order or disposition must be observed as well in a picture consisting of one figure, as in a picture of many figures. The nature of man, saith *Xenophon in Oeconomico*, cannot name any thing so useful and fair, as order; a confused piece of work cannot deserve admiration; those things only affect us, wherein every part is not only perfect in it self, but also well disposed by a natural connexion. It is not enough in a building to bring hair, lime, sand, wood, stones, and other materials, unless we take care that all this confused stuff be orderly disposed to the intent. Nature it self seems to be upholden by Order, and so are all things else which are subjugated to the same Law. Now the way to attain to this true order of disposition, is first to conceive the Idea of the history in the imagination, that the presence of the things in the mind may suggest the order of disposing

sposing each thing in its proper place, yet with that subtilty that the whole may represent one intire body.

- *Secondly*, that the frame of the whole structure of this disposition, may be analogous to the things themselves; so that we may at once represent things which are already done, things which are doing, and things which are yet to be done; perfecting, as *Philostratus* saith, in every one of these things, what is most proper, as if we were busied about one only thing. *Thirdly*, an historical Picture must represent the series of the history, which although the Picture be silent, yet that the connexion might (as it were) speak, putting the principal figures in the principal places. *Fourthly*, the parts must be connected easily rolling on, gently flowing or following one another, hand in hand, seeming both to hold and be upheld, free from all abruption, well grounded, finely framed, and strongly tyed up together; that the whole may be delightful for its equality, grave for its simplicity, and graceful for its universal analogical composure. *Fifthly*, that most excellent pieces (if the history will suffer it) be shadowed about with rude thickets, and craggy rocks, that by the horridness of such things, there may accrew a more excellent grace to the principal; (just as discords in Musick make sometimes concords) from whence results a singular delight. *Sixthly*, that to these things be added perspicuity; which, as *Lucian* saith, through the mutual connexion of things, will make the whole complete and perfect. *Seventhly* and lastly, that the disposition of the proportion be observed, in the due distance of each figure, and the position of their parts, of which we have said something, Section seventh; but in general *Pliny* (lib. 35. cap. 10.) saith, that in this general disposition of proportional distances, we have no rules; our eye must teach us what to do; to which

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*Quintilian* assents, where he saith, that these things admit no other Judgment, but the judgment of our eyes.

**XI.** Lastly, *For the absolute Consummation or Perfection of the Art, excellency of Invention, Proportion, Colour, Life and Disposition, must universally concur, and conspire, to bring forth that comely gracefulness, which is the very life and soul of the work, the intire and joint Summe of all perfections.*

It is not enough, that a Picture is excellent in one or more of the aforesaid perfections, but the consummation is, that they all concur ; for if but one be wanting, the whole work is defective. A good invention affects the mind ; true proportion draws the eyes ; lively motion moves the soul ; exquisite colours beguile the phantasia ; and an orderly disposition, wonderfully charms all the senses ; if all these unite, and center in one piece, how great an excellence and perfection will appear ? *What a comely Grace ?* this *Grace* it is, which in beautiful bodies is the life of beauty, and without which, its greatest accomplishments cannot please the beholder. For it is not so much the perfection of Invention, Proportion, Colours, Motion and Disposition apart, which affect the senses ; but *all those perfections absolutely united*, which brings forth that comely *Grace*, and *highest Perfection*, which Art aims at, and the Artizan strives after. This *Grace* proceeds not from any rules of Art, but from the excellent spirit of the Artificer ; it is easier attained by observation and a good judgment, than learn'd by Precepts, as *Quintilian* in his *Institutions lib. 11. cap. 1.* learnedly observes. And this *Grace* is most graceful, when it flows with facility, out of a free Spirit, and is not forced or strained out with labour and toil, which quite spoils

spoils and kills the life of the work : Now this facility  
 springs from Learning, Study and exercitation. *Art*  
 and *Nature* must concur to the Constitution of this  
*Grace*; *Art* must be applied discreetly to those things  
 which we *naturally* affect, and not to things which  
 we loath; lest we miss of *that Glory* which we seek  
 after.

*Errata sic emendanda.*

**P** Ag. 11. l. 10. read prints: p. 29. l. 29. r. V: p. 43. l. 35. r. II: p. 57. l. r.  
 r. Chap. XXIII: p. 60. l. 5. r. VI: p. 60. l. 29. r. XI: p. 61. l. 32. r. VII: p.  
 110. l. 30. r. IV: p. 119. l. 29. read, the nightly bear: p. 139. l. 7. r. XV: p. 141. l. 10.  
 r. II: p. 141. l. 26. r. X: p. 156. between l. 8. and 9. r. IV. Another for the same:  
 p. 165. l. r. r. Chap. XVIII: p. 184. l. 22. r. VII: p. 203. l. 10. r. IX: p. 162. be-  
 tween l. 18. and 19. r. III. By some he is thus described: p. 268. l. 26. r. VII:  
 p. 268. l. 32. r. VIII: p. 271. l. 6. r. V: p. 277. l. 5. r. VI: p. 279. l. 16. r. Gaffarel: p.  
 292. l. 27. and 28. are transposed: p. 296. l. 31. r. XIV: p. 309. l. 1. r. are two on-  
 ly: l. 2. and they are Antimony and Sulphur: p. 312. l. 25. well Perfume:  
 p. 329. l. 3. Spirit of Urine.

**F I N I S.**

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